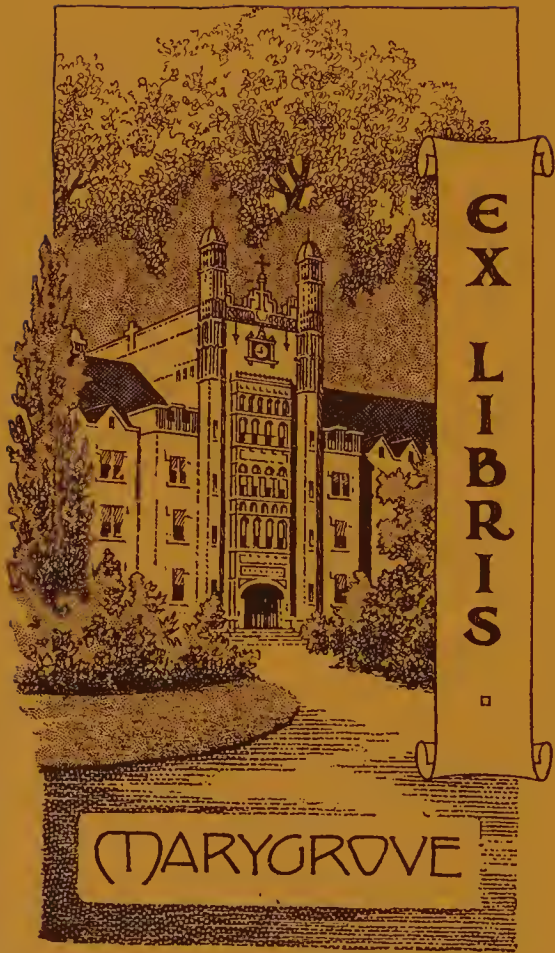


NATIONAL SOCIETY FOR THE
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YEARBOOK PUBLICATIONS

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NATIONAL SOCIETY FOR THE
STUDY OF EDUCATION

Yearbook Publications

VOLUME V

YEARBOOKS XV, Part II—XVII, Part I
1916 to 1918

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS

SUMMARY OF YEARBOOKS XV, PART II THROUGH XVII, PART I

THE FIFTEENTH YEARBOOK, PART II (1916)

THE RELATIONSHIP BETWEEN PERSISTENCE IN SCHOOL AND HOME CONDITIONS Charles E. Holley

The author of this monograph investigated on a fairly comprehensive scale the question: What factors determine the number of years of schooling received by pupils in the public schools? Among the conclusions reached are these: (1) There is a high correlation between the general cultural advantages of a home and the schooling the children will receive. (2) Environmental influences more often cause a child to stop attending school than lack of ability. (3) Early elimination from school is largely due to factors over which the school has little or no control. (4) High schools are largely attended by the children of the "better class." (5) Marriages are distinctly affected by "educational selection." (6) A family tradition of schooling is effective in inducing unusual persistence in school in some cases.

THE FIFTEENTH YEARBOOK, PART III (1916)

THE JUNIOR HIGH SCHOOL Aubrey A. Douglass

This monograph, which is accompanied by a bibliography of 173 titles, presents an excellent account of the junior high school as it existed in 1916. In the Appendix, particularly, will be found a general summary of the situation based on information from 100 American cities. The body of the volume discusses the general problems involved, the arguments for and against this type of school, its curriculum, its housing, and the characteristics of adolescence that it attempts to meet and utilize.

THE SIXTEENTH YEARBOOK, PART I (1917)

SECOND REPORT OF THE COMMITTEE ON MINIMAL ESSENTIALS IN ELEMENTARY- SCHOOL SUBJECTS

W. C. Bagley, W. W. Charters, F. N. Freeman, W. S. Gray, Ernest Horn,
J. H. Hoskinson, W. S. Monroe, C. F. Munson, H. C. Pryor,
L. W. Raper, G. M. Wilson, and H. B. Wilson

This yearbook is the 1917 report of investigators coöperating with the Committee on Economy of Time of the Department of Superintendence of the National Education Association, H. B. Wilson, chairman, and is the second

printed report of that committee. It contains a further report on every subject discussed in the first report (Fourteenth Yearbook, Part I) and also a preliminary report on physical education. In this report the emphasis is upon the social value of the content of the several school subjects as a basis for the instruction given in them.

THE SIXTEENTH YEARBOOK, PART II (1917)

THE EFFICIENCY OF COLLEGE STUDENTS AS CONDITIONED BY AGE AT ENTRANCE AND SIZE OF HIGH SCHOOL

B. F. Pittenger

The author of this monograph sought by statistical methods to answer two questions: Is the quality of work done by college students affected by the age at which they enter or by the size of the high school from which they come? His results, based on a study of 828 students at the University of Minnesota, show, among other things, (1) that those entering before 18 years of age did better work than those who entered at 18 or later, (2) that graduates of public schools did better work than graduates of military, private, or church schools, (3) that graduates of large schools did better work than graduates of small schools, (4) that the women did better work than the men, and (5) that elimination from the college, especially in the freshman year, is highly qualitative, in that the good students tend to remain and the poor ones to leave.

THE SEVENTEENTH YEARBOOK, PART I (1918)

THIRD REPORT OF THE COMMITTEE ON ECONOMY OF TIME IN EDUCATION

W. C. Bagley, B. B. Bassett, M. E. Branom, Alice Cameron, J. E. Dealey,
C. A. Ellwood, E. B. Greene, A. B. Hart, J. F. Hosie, E. T. Housh,
W. H. Mace, L. R. Marston, H. C. McKown, A. E. Mitchell,
W. C. Reavis, D. Snedden, and H. B. Wilson

This is the 1918, or third (printed) report of the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education, and is prepared by various coöperating investigators. Like the first and second reports, printed as yearbooks of this Society, it deals primarily with studies concerning the minimal essentials of various elementary-school subjects, including arithmetic, geography, reading, composition, civics, and history. A special feature of this report is a symposium on the purposes of historical instruction in the seventh and eighth grades, arranged by W. C. Bagley, and contributed to by Professors Dealey, Ellwood, Greene, Hart, Mace, and Snedden. With the exception of this symposium, the various articles in this yearbook deal with actual investigations of the content of the curriculum, especially in its relation to the needs of daily life.

THE
FIFTEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART II

THE RELATIONSHIP BETWEEN PERSISTENCE IN
SCHOOL AND HOME CONDITIONS

BY

CHARLES ELMER HOLLEY
Ohio Wesleyan University

Edited by GUY M. WHIPPLE

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
1919

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Published April, 1916
Reprinted June, 1919
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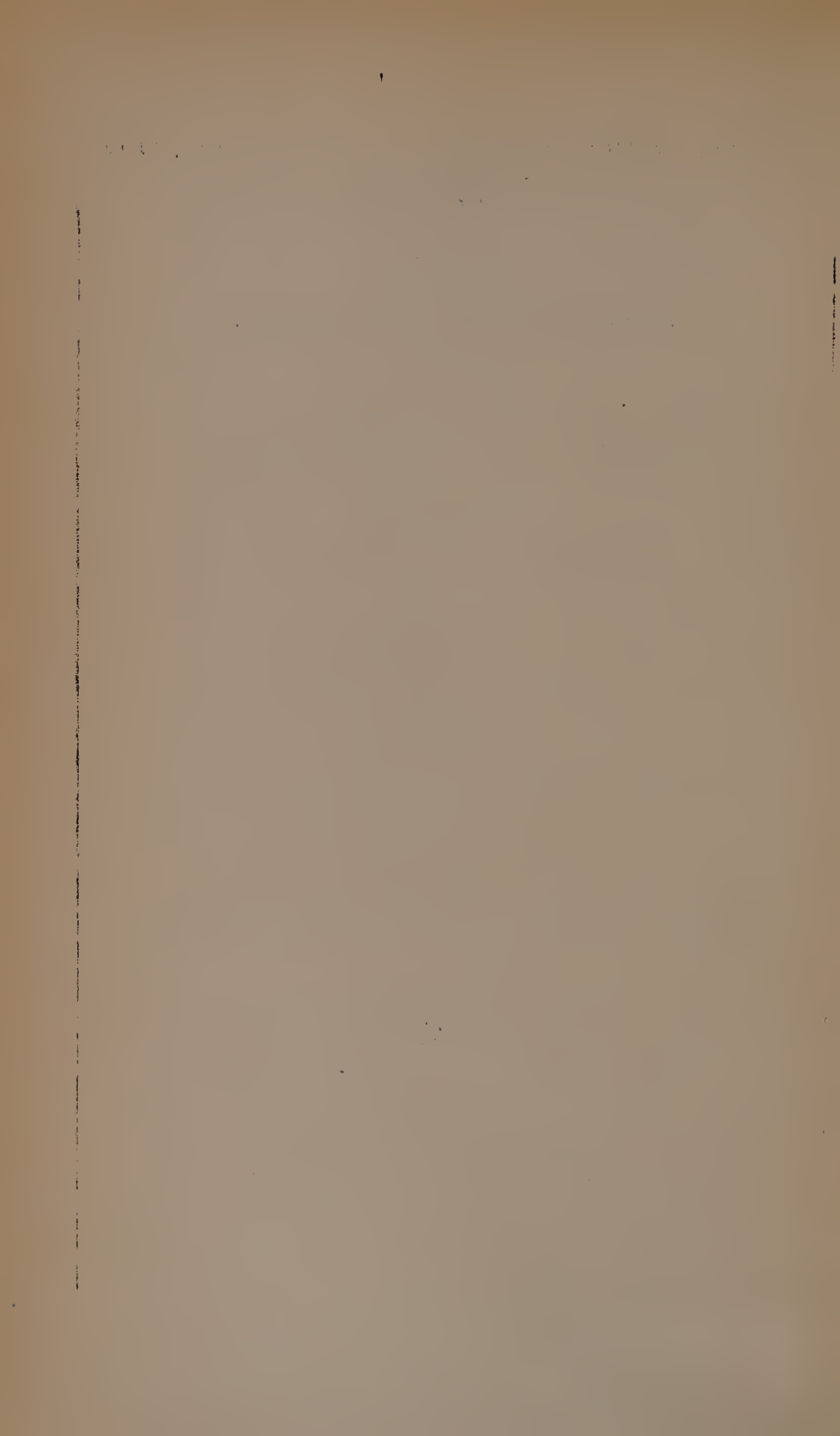


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EDITOR'S PREFACE

In this part of the *Fifteenth Yearbook* Dr. C. E. Holley presents the results of a direct investigation on a fairly comprehensive scale of the important question: What factors determine the number of years of schooling received by pupils of the public schools? The investigation was carried on in several Illinois cities; the results are doubtless typical for the Middle West, if not for the country generally. It will be noted that the outcome of the study coincides in some respects with beliefs current in educational circles, but contradicts those beliefs in other respects. A close correlation is discovered between years of schooling and the economic, social, and educational advantages of the homes from which the pupils come, and these environmental conditions appear to be more important than degree of native ability in determining amount of schooling. Retardation and truancy are most frequent among the children of poor and uneducated parents. Size of family, however, has no appreciable effect on persistence in school. Of particular interest to schoolmen is the demonstration that early elimination is largely due to external factors over which the school has little or no control. The selected bibliography on elimination and related issues found at the end of the text will, it is hoped, be useful to readers of the *Yearbook*.

G. M. W.

THE RELATIONSHIP BETWEEN PERSISTENCE IN SCHOOL AND HOME CONDITIONS¹

CHARLES ELMER HOLLEY
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PART I

INTRODUCTORY STATEMENT

THE PROBLEM

This study is concerned primarily with the qualitative analysis of the relationships which exist between the schooling of children and their home conditions. It is concerned secondarily with a rough determination of the relative importance of the hereditary and the environmental factors involved in these relationships.

ORIGIN AND DEVELOPMENT OF THE STUDY

The study is an outgrowth of a social survey of the Decatur, Illinois, high school made by the writer during the school year of 1912-13. In making this survey a large amount of data was secured, most of which proved to be of relatively little importance, but among the many facts there were a few which suggested family tendencies in the matter of educating children. Some of the families gave all the older children a high-school education, while other families, of similar size and age-composition, did not have one child who had completed the high-school work. All the families having two or more children no longer in the public school were selected and examined. There proved to be 198 such families, containing 642 older children, 334 of whom had secured a high-school education. A further examination showed that 40 per cent of the 198 families furnished 72 per cent of those who had finished the high school, and 30 per cent of the families furnished 57 per cent of those who

¹ This study was accepted as the dissertation for the doctorate of philosophy in education by the Graduate School of the University of Illinois. The writer wishes to acknowledge his indebtedness for counsel and suggestions given by Dr. W. C. Bagley and Dr. L. D. Coffman. Further, many useful suggestions were received from Dr. G. M. Whipple, Dr. C. H. Johnston, and the graduate students in education.

had not finished the high school. This difference suggested that there must be corresponding differences in the homes which might be ascertained. Data were secured and it was found that these two groups of homes differed markedly with respect to economic, educational, and social conditions.

Three years ago Dr. J. K. Van Denburg published the results of an investigation conducted in the New York City schools. He found that "on the whole, the economic status of these pupils (so far as it is shown by monthly rental) seems to be only a slight factor in the determination of length of stay in the high schools. The one most marked influence seems to be that the superior economic status in girls leads to a longer stay in spite of failure to progress at the 'normal' rate."¹

At another place Dr. Van Denburg shows² (Table I) the percentages of the different rental groups³ who graduated from the high school which

TABLE I
PERCENTAGE GRADUATING, CLASSIFIED ACCORDING TO
RENTAL GROUPS

Amount	Graduates	Total Entering	Percentage Graduating
Boys			
Not specified.....	22	.....	.....
\$ 8 to \$17.....	9	76	11.8
\$18 to \$27.....	8	34	23.5
\$28 and up.....	4	48	8.3
Girls			
Not specified.....	40	.....	.....
\$ 8 to \$17.....	14	99	14.1
\$18 to \$27.....	10	71	14.0
\$28 and up.....	4	65	6.1

they entered four years earlier. He, however, has no record of those who left the public schools and went to private schools, a group mentioned as a factor of some importance. Hence the group "28 and up," would

¹ *Causes of the Elimination of Pupils in Public Secondary Schools* (New York: Published by Teachers College, 1912), p. 113.

² *Ibid.*, p. 134.

³ A rental group is a group of families which paid specified amounts of rent per month. All the families selected were divided by Van Denburg into three rental groups: (1) those paying \$8 to \$17 per month, (2) those paying \$18 to \$27 per month, and (3) those paying \$28 or more per month.

have to be augmented by an unknown quantity to represent the true percentage of those who received the equivalent of four years in the public high school. It is conceivable that this unknown quantity would be large enough to show a definite relationship for the boys between economic status and persistence in school. With the girls the case would not be so clear, for the two smaller groups contain the same percentage of graduates. It may be that the economic factor is of less importance with girls than with boys.

To be conservative, it might be said that the economic status of the families in Dr. Van Denburg's study is not of sufficient importance to overshadow or more than counteract other factors which make for persistence in, or elimination from, the public high schools of New York City. He has shown that the presence or absence of younger children in the family, the nationality of the parents, choice or lack of choice of an occupation, and intention with regard to graduation are factors correlated with the length of stay in the high school. A more detailed study of home conditions might reveal other factors of far greater influence in this city than economic status.

In another study¹ Dr. C. H. Keyes showed that acceleration or retardation were characteristic of certain families. He found that 6.8 per cent of the families produced 24 per cent of the accelerates, while 7.7 per cent of the families produced 24.5 per cent of the arrests. These facts obtained in a New England city tend to support those obtained in Decatur.

The apparent disagreement between the conditions found by Dr. Van Denburg in New York City and those found by the writer in Decatur, Illinois, raised the question: "Is Decatur representative qualitatively of the average middle western city?" With this question in mind it was decided to extend the study to other Illinois cities, and information was collected from the high schools of Centralia, Champaign, Gibson City, and Rochelle, Illinois. While these data were being collected, it occurred to the writer that this study dealt with a special class—those whose children reached the high school—and represented a special situation, and hence that it ought to be extended so as to include statistics from all levels of society. Accordingly the families residing in Urbana who had children between the ages of fourteen and twenty-one were selected, and

¹ C. H. Keyes, *Progress through the Grades of City Schools* (New York: Published by Teachers College, 1911).

a personal canvass was made by the writer which furnished a mass of facts from 234 homes. When these data had been tabulated and evaluated, and an interpretation was attempted, it was found that, although important relationships existed between the amounts of schooling that the children received and certain objective home conditions, it was impossible to distinguish between environmental and hereditary factors, a distinction that is very important from social and educational points of view. In order more accurately to determine the relative importance of these two types of factors it was decided to secure similar facts about the education and home conditions of adopted children.

In outline this presents the origin and development of the study. The presentation of the data will follow the same general order.

THE DATA

Sources.—The facts presented in Part II were secured from the high-school pupils of Decatur, Illinois, during the fall of 1912. Those in Part III were collected from the high-school pupils of Centralia, Champaign, Gibson City, and Rochelle, Illinois, during the fall of 1913. The main data, those in Part IV, were gathered directly from the homes and from the courthouse records in Urbana, Illinois, during the summer and fall of 1914. The information about the adopted children, given in Part V, was secured from the Urbana courthouse records and from various individuals who resided in Champaign and Urbana during the early months of 1915.

Method of collecting.—The original data which uncovered the problem were secured from the high-school pupils of Decatur during the fall of 1912. One morning in November the writer called at the school with a supply of blanks asking the following questions, as well as a number of others which had no bearing on the present problem:

Name.....Sex.....Age.....
 Country of your mother's birthplace.....
 Country of your father's birthplace.....
 What language is commonly spoken in your home?.....

OLDER BROTHERS

No.	Age	Has he finished high school?	What is he doing now?
1.
2.
3.
4.
5.

OLDER SISTERS

No.	Age	Has she finished high school?	What is she doing now?
1.
2.
3.
4.
5.

The teachers were instructed briefly as to the facts desired and the collection of data was then left in their hands. The first period of the morning was used and each of the pupils attending at that time was required to fill out one of the blanks. Through the assistance given by the room-charge teachers the entire high school furnished the desired information in a short time.

After it was discovered that one group of homes educated its children more than the other group, it was thought that an objective description of these homes might be secured from the children who attended high school. For this purpose a blank was prepared asking for the following data:

- a) Father's occupation.....
- b) Father's education..... mother's education.....
- c) What is the family income?.....
- d) What rent does the family pay per month (estimated by the kind of house in which they live)?.....
- e) Church affiliation of father..... of mother.....
- f) What newspapers does the family take?.....
What magazines?.....
- g) What is the size of the family library?.....
- h) What clubs or organizations does the father attend?.....
.....
The mother?.....

These blanks were given to the pupils from the selected homes and were filled out in conference with the teachers or principal. The results were later checked up by the principal, and reports containing obvious errors were marked so that the erroneous portions could be eliminated.

As stated earlier, the facts reported in Part III were secured from the high-school pupils of Centralia, Champaign, Gibson City, and Rochelle, Illinois. A blank asking for the following information was used.

- Name.....Sex.....
1. Country of mother's birth.....
 2. Country of father's birth.....
 3. Father's occupation.....
 4. Father's education (in years of schooling).....
 5. Mother's education (in years of schooling).....
 6. What monthly rent do your parents pay for the house in which they live? (If they own their home, estimate the rent by comparing with rented houses in the neighborhood.).....
 7. How many volumes in your home library?.....

OLDER BROTHERS

OLDER SISTERS

No.	Age	Education in years of schooling	No.	Age	Education in years of schooling
1.	1.	.....	.....
2.	2.	.....	.....
3.	3.	.....	.....
4.	4.	.....	.....
5.	5.	.....	.....

Copies of this were sent to the principals or superintendents of Centralia, Gibson City, and Rochelle, and they secured the information from the pupils as best they could. In Gibson City this method resulted in returns from all the pupils attending on the day the information was secured. In Centralia and Rochelle less pressure was put upon the pupils and some failed to furnish any information. In Champaign the writer gathered the data during the English class periods, personally directing the work of the pupils. By answering any queries which arose because of a misunderstanding of any of the questions and by suggesting ways of estimating some of the items, he secured careful replies from almost all the pupils. They were told that it was not necessary for them to sign their names. Hence it was easy to meet any objections which a pupil might have to answering personal questions, and all the pupils filled out the blanks. In the other three towns the pupils signed the blanks, a fact which made them a little more reserved in their replies.

The information which forms the basis of Part IV was secured through a personal canvass made by the writer during June and July, 1914, in Urbana. The university-community portion of the town is a students' residence district and education is a thing uppermost in the minds of those who live there. It contains many families who have moved to Urbana to educate their children. Because of this emphasis on education and because of the difficulty of gauging an economic index where there are so many temporary residents, all families who lived west

of Coler Street and south of Springfield Avenue were eliminated from consideration. The families of the university faculty who lived outside of this area were also eliminated. The preliminary list of names was secured from the 1913 school census records, which gave every home containing an individual under twenty-one years of age. The list finally selected was restricted to those homes which included individuals fourteen to twenty-one years of age, and contained about 550 names. When the actual canvass was made, it was found that a few of these homes contained no children over fourteen (roomers under twenty-one years of age having been found by the school census taker and recorded) and that a few of the listed families had moved out of town. These two factors reduced the list of possible calls to slightly less than 500. The writer called at the homes on all the east and west streets (most homes in Urbana face these streets). Sometimes no one was at home. When convenient a second or even a third call was made to secure the desired information. The canvass resulted in securing information from 234 homes of whites and 5 homes of colored people and gave a random sampling of the community. The colored homes are not included in the study because their members belong to a race which is not as yet a homogeneous element of the population. Their number was too small to be studied separately. As an aid and guide in securing the information the following blank was used:

1. Occupation of father.
2. Country of father's birth. of mother's birth.
3. Father's native language. mother's native language.
4. Education of father. of mother.
5. Number of books in the home.
6. Number of living-rooms in home.
7. Number of people living in house over fourteen years of age.
Under fourteen years of age.
8. Number of members of family living at home.
9. Rent per month.
10. Children above fourteen years of age.

	Sex	Age	Years of schooling each has received
1.
2.
3.
4.
5.
6.
7.
8.

In conducting the canvass, the writer, after introducing himself, usually began with an inquiry as to the number of children in the home, their age, and education. Experience showed that parents were quite ready to talk about their children and that, after getting somewhat acquainted with the writer, they were then more free in answering the other questions. By this procedure the facts were secured to question No. 10 first and then the blank was filled out in order, beginning with question No. 1.

The figures for the personal property and real estate assessments were taken from the courthouse records giving the assessments for the 1915 taxes. In case a name did not appear here, the previous year's records were examined. In a few cases the figures were obtained in the latter way.

The data which furnish the basis for the discussion of adopted children, presented in Part V, were gathered by the writer through a personal canvass. The original list of names was secured from the court records which gave the adoptions made in Champaign County since 1871. From these records the sex, date of birth, date of adoption, names of foster-parents with their town addresses, the changed name of the child, and cause of adoption were secured for each child. Excluding all children who would not now be at least fourteen years old, the list contained 155 cases of adoption. The present addresses of as many as possible of these foster-parents, of the children, or of someone who could give the desired information were secured from directories and from people who have long resided in Champaign or Urbana. That the results might be comparable with those presented in Part IV, only those parents who lived in Champaign or Urbana and reared the children there were included in the study.

In securing these data a form quite similar to that used in the earlier canvass was employed. It was as follows:

- Parents' names.
1. Occupation of father.
 2. Nativity of father. of mother.
 3. Schooling of father (in years). of mother.
 4. Estimated number of books in home.
 5. Financial status of parents: very poor, poor, average, well-to-do, wealthy (check).
 6. Estimated rent of home in which family lived when children were in school.
 7. Facts about all children living or dead, who reached fourteen years of age.

	Date of birth	Sex	Schooling in years
1.
2.
3.
4.
5.
6.
7.
8.

The procedure was approximately the same, after the list of names and addresses was secured, as that followed in gathering the data for Part IV. Members of the family or relatives furnished the information for all but one of the children studied.

Errors.—The data secured from the pupils through questionnaires which they themselves filled out were probably more inaccurate than those secured by the writer through the personal canvass. The greatest constant error is that of omission. It is thought by the writer that the effect of this is nearly that of pure chance, though this may be proved otherwise if carefully investigated. However, since this is primarily a qualitative study, such errors will be less serious than if it were a purely quantitative investigation. Wilful untruths may have existed in the data, but they were very rare. From the nature of the questions and the conditions under which they were answered, some of the data are estimates, more or less inaccurate. Errors peculiar to one kind of data will be mentioned during its discussion.

Method of treatment.—The statistical method¹ will be used in this study. All the important relationships will be expressed through coefficients of correlation. All correlations will be worked according to the “product-moment” method of Pearson where $r = \frac{\sum xy}{n \sigma_1 \sigma_2}$. The reliability of all correlations will be expressed according to the formula $P.E. = 0.6745 \frac{1-r^2}{\sqrt{n}}$. The reliability of the difference between two medians will be expressed according to the formula $P.E.D. = \sqrt{\frac{P.E._1^2}{n_1} + \frac{P.E._2^2}{n_2}}$. All central tendencies will be expressed by medians.

¹ All the formulas used can be found in any standard work on statistical methods. See Thorndike, *Mental and Social Measurements*; or Whipple, *Manual of Mental and Physical Tests*, 2d ed., Part I, “Simpler Processes.” Whipple gives on p. 35 a table showing the reliability of *P.E.* according to its relative size.

PART II

RELATIONSHIPS FOUND IN DECATUR

The original data collected in Decatur during the fall of 1912 revealed 198 children from homes having two or more older children no longer in the public school. These homes when examined could be distributed readily among three groups: (I) those from which all the older children had completed the high-school work; (II) those from which none of the older children had completed the high-school work; (III) those in which some of the older children had graduated from the high school and others had not.

In all there were 642 older brothers and sisters, 334 of whom had secured a high-school education. Group I contained 78 families and furnished 72 per cent of the 334 children. Group II contained 59 families and furnished 57 per cent of the 308 who had not finished high school.

This section will be devoted to a discussion of the differences between home conditions in the first two groups.

The replies were most nearly complete with respect to the education of the parents, though a few children failed to give this information. When the replies were checked, it was found that some information was secured concerning 60 homes of Group I and 43 homes of Group II. On some of the blanks there was very little information, probably because the pupils, or even the parents in some cases, could not give the facts desired.

RESULTS OF THE INVESTIGATION

The differences between the two types of homes are striking.

a) *Occupations*.—The fathers of Group I (the families that gave their children a high-school education) are chiefly engaged in professional and commercial occupations (see Table II). The fathers of Group II (the families that did not provide a high-school education for their children) are chiefly engaged in artisan trades, and in semi-skilled and unskilled occupations (Table II).

b) *Schooling*.—The median number of years of schooling received by the parents of Group I is twelve; by the parents of Group II, eight

(see Table III). In Group I, 60 per cent of the fathers and 61 per cent of the mothers have had the equivalent of a high-school education,

TABLE II

OCCUPATIONS OF FATHERS

GROUP I		GROUP II	
Occupation	No.	Occupation	No.
Farmer	8	Farmer	6
Lawyer	4	Retired farmer	3
Insurance	4	Carpenter	3
Real estate dealer	3	Minister	3
Retired farmer	2	Blacksmith	3
Physician	2	Cabinet-maker	2
Public official	2	Night watchman	2
Jeweler	2	Janitor	2
Cashier	2	Railroad engineer	1
Minister	2	Railroad conductor	1
Implement dealer	1	Mail clerk	1
Druggist	1	Shoeman	1
Millwright	1	Lock-maker	1
Business	1	Factory employee	1
Painter and decorator	1	Boiler-maker	1
Floor-walker	1	Clothier	1
Nurseryman	1	Gardener	1
Mason	1	Cement contractor	1
Railroader	1	Commission dealer	1
Music store	1	Horse-dealer	1
Brick business	1	Grocer	1
Bookkeeper	1	Miller	1
Auto trimmer	1	Clerk	1
Proprietor, machine-shop	1	Passenger engine inspector	1
Hotel-keeper	1		
Machinist	1		
Cement factory	1		
Carpenter	1		
Secretary and treasurer	1		
Barber	1		
Furnaceman	1		
Railroad engineer	1		

while more than 91 per cent of the fathers and mothers of Group II have had less than four years of high-school work. Indeed, 74 per cent of

the fathers and 71 per cent of the mothers of Group II did not go beyond the eighth grade. The mathematical differences between the medians of the two groups, 3.68 ± 0.38 years for fathers and 3.70 ± 0.38 years for mothers, have a high degree of reliability.

TABLE III
THE EDUCATION OF FATHERS AND MOTHERS

NUMBER OF YEARS OF SCHOOLING	GROUP I		GROUP II	
	Fathers	Mothers	Fathers	Mothers
2.....			I	
3.....				
4.....				
5.....				I
6.....	2			
7.....	2		I	3
8.....	11	12	24	21
9.....		I		
10.....	5	6	4	4
11.....			2	3
12.....	15	16	I	2
13.....	4	2		
14.....	5	11	2	I
15.....	I			
16.....	3	I		
18.....	2			
Median years of education	12.33 years	12.34 years	8.65 years	8.64 years

Difference between median education of Groups I and II,
fathers = 3.68 ± 0.38 years

Difference between median education of Groups I and II,
mothers = 3.70 ± 0.38 years

c) *Incomes and rent.*—As would readily be inferred from the facts concerning occupation and schooling just presented, the yearly incomes and monthly rentals are higher with those who sent their children through the high school than with the other group. The median yearly income of Group I is \$2,000; of Group II, \$1,350 (Table IV). Each family studied in this section contained at least three children, and the average is almost five. Thus it seems that the problem of furnishing the necessaries of life must be a serious one for many families of Group II.

The differences between the rental values of the two groups of homes are evident to one who simply glances at Table V. Statistically they are shown by the difference in the medians. They are marked, for 81 per

TABLE IV
INCOMES*

	Group I	Group II		Group I	Group II
Below \$699		2	\$1,800 to \$1,899		2
\$ 700 to \$ 799	I	3	1,900 to 1,999	I	I
800 to 899	I	3	2,000 to 2,099	I	I
900 to 999	I	2	2,100 to 2,199		
1,000 to 1,099	3	3	2,200 to 2,299		I
1,100 to 1,199		I	2,300 to 2,399		
1,200 to 1,299	6	I	2,400 to 2,499		I
1,300 to 1,399	I	I	2,500 to 2,599	3	I
1,400 to 1,499		2	3,000 to 3,999	5	I
1,500 to 1,599	2	3	4,000 to 4,999	5	
1,600 to 1,699	2	I	5,000 and above	5	
1,700 to 1,799	I	I	Median income	\$2,000	\$1,350

Difference between medians of Group I and II = \$650 = \$242

* A number of families had such indefinite incomes that the parents themselves could not estimate them.

cent of the families in Group I pay \$25 or more a month while 77 per cent of Group II pay less than this amount. A house with modern improvements, bath, toilet, etc., large enough for a family of six costs

TABLE V
RENTAL VALUES OF HOMES*

Per Month	Group I	Group II	Per Month	Group I	Group II
\$10		I	\$20	I	II
11			22.50	I	I
12			25	10	4
13		2	30	6	
14		I	35	4	2
15	I	3	40	5	I
16	I	I	50	I	
17	I	I	Median rent	\$30	\$20.80
18	I	3	No. who own their homes	14	9
19					

Differences between medians of Groups I and II = \$9.20 = \$1.17

*The question which asked for this information was poorly constructed. It was: "What rents does the family pay per month (estimated by the kind of a house in which they live)?" Some replied by merely stating that they owned the home. Others estimated the rent even if they owned the home.

at least \$25 a month in Decatur. Hence a large part of the families of Group II live in somewhat undesirable houses. The number reported

TABLE VI
NEWSPAPERS TAKEN

	Group I	Group II
Decatur papers.	77	55
Chicago papers.	15	5
Other local papers.	8	2

as owning their homes, 14 families of Group I and 9 families of Group II, is too small to be a basis for any significant conclusions.¹

TABLE VII
MAGAZINES TAKEN

	Group I	Group II
<i>Ladies' Home Journal</i>	23	20
<i>Woman's Home Companion</i>	13	5
<i>Saturday Evening Post</i>	11	1
<i>Cosmopolitan</i>	9	2
<i>Pictorial Review</i>	7	3
<i>Youth's Companion</i>	6	4
<i>Good Housekeeping</i>	6	2
<i>Popular Mechanics</i>	6	1
<i>Literary Digest</i>	6	.....
<i>Everybody's</i>	5	2
Religious papers.	4	4
<i>Collier's</i>	4	3
<i>McClure's</i>	4	1
<i>Woman's World</i>	3	6
Farm papers.	2	3
<i>Motor Age</i>	2	.....
<i>Life and Judge</i>	2	.....
<i>Review of Reviews</i>	1	1
Boys' paper.	1	.....
<i>Home-Life</i>	1	.....
<i>Current Events</i>	1	.....
<i>Success</i>	1	.....
<i>Travel</i>	1	.....

d) *Home culture*.—There is only a slight relationship between the number of newspapers taken by a home and the schooling and financial standing of the parents (Table VI). Every home in both groups took

¹ The difference between the median rents of the two groups is much more reliable than the differences between median incomes. The latter is barely large enough to justify statistical consideration.

a daily newspaper with one exception, a home of Group I. This home took several magazines.

The two groups of homes showed a much greater difference when the quantity and quality of the periodical literature were examined. Magazines of the better class were found in the homes represented by Group I, but were very infrequently found in the homes of Group II (Table VII).

The library facilities of the two groups of homes correspond to the other characteristics already discussed. The median number of books found in homes of Group I was 271; in Group II, 83 (Table VIII). In other words, the average home of Group I had more than three times as many books in it as the average home of Group II. All but one of the homes of Group II, or 97 per cent, had smaller libraries than the average home of Group I.

TABLE VIII

LIBRARIES

Volumes	Group I	Group II	Volumes	Group I	Group II
Less than 50	4	10	301-400	7	.....
51-75 . . . . .	.....	6	401-500	1	.....
76-100	2	5	501 and over	6	1
101-200	6	12	Median number of volumes	271	83
201-300	7	1			

Difference between medians of Groups I and II = 188 = 24 volumes

e) *Clubs and organizations.*—The number of clubs and organizations attended by the fathers of Group I was larger than the number attended by the fathers of the other group (Table IX). The fathers of Group I were more often members of those social and recreational societies which are somewhat of an economic burden. Among the mothers the only important difference to be noted is that the mothers in Group I attended the “women’s clubs” while mothers in Group II attended the “mothers’ club” of the public school.

f) *Religious affiliations.*—The differences which appeared between the two groups with respect to this point (Table X) were not significant in their bearing upon persistence in school. A more extended study might reveal important facts which did not appear in the small number of cases secured in this study.

TABLE IX
CLUBS AND ORGANIZATIONS ATTENDED BY THE FATHERS AND MOTHERS

	FATHERS		MOTHERS	
	Group I	Group II	Group I	Group II
Masons	17	3		
Woodmen	13	4		
Oddfellows	8	5		
Social or recreational	8		I	
Knights of Pythias	5	2		
Professional	4	3		I
Moose	2	I		I
Chamber of Commerce	I			
Knights of Columbus	I	I		
Trade union	I	6		
Owls		I		
G.A.R.		I		
Rebecca	I	I	3	4
Royal Neighbors		I	6	6
Church societies	I	I	12	8
Court of Honor	I	2	I	I
Ben Hur		2		4
Yeomen	I	I	I	
Women's clubs			8	I
Eastern Star			2	
King's Daughters			I	
Mothers' club			I	6
Y.W.C.A.			I	
W.C.T.U.			I	I

TABLE X
CHURCH AFFILIATIONS OF FATHERS AND MOTHERS

	FATHERS		MOTHERS	
	Group I	Group II	Group I	Group II
Methodist Episcopal	15	17	6	8
Presbyterian	11	12	2	3
Christian	5	6	4	4
Congregational	3	3	2	2
United Brethren	3	3	I	2
Baptist	3	2	6	7
Lutheran	2	3	3	4
Catholic	I	3	2	I
Free Methodist	I	I		
German Methodist	I	I	I	I
Episcopal	I	I		
Christian Science		I		
African Methodist			I	I
Church of God			I	I
Unitarian			I	I
Protestant				I

SUMMARY AND CONCLUSIONS

Seventy-eight families, 40 per cent of those which had two or more older children no longer in the public school, furnish 72 per cent of the 334 high-school graduates.

Fifty-nine families, 30 per cent of those studied, furnished 57 per cent of those who did not finish high school.

As a class, the parents of the first group were better educated, were employed in different occupations, received larger incomes, paid more rent per month or lived in better homes, took a greater number and a better type of magazines and newspapers, had larger libraries, and attended a different type of clubs, organizations, and churches than the parents of the group of families none of whose older children finished high school.

There was, in Decatur, Illinois, a decided relationship between advantages of home conditions and the amounts of schooling which children received.

PART III

RELATIONSHIPS FOUND IN CENTRALIA, CHAMPAIGN, GIBSON CITY, AND ROCHELLE

This section is based on the data secured from the high-school pupils of Centralia, Champaign, Gibson City, and Rochelle. Only the replies of those pupils who reported older brothers or sisters no longer in school were used. This selection reduced the total number of homes studied to 318. An appreciable number of the blanks failed to give all the information desired. A blank might omit the schooling of the father or mother, the rental estimate, the number of books in the home, or the schooling or sex of the older children. In such a case it was not rejected, but the available information which it contained was utilized. Consequently the numbers given in the various tables differ. Thirty-three pupils failed to give estimates of the schooling of their parents, 99 gave no estimate of the monthly rental, and 111 did not report the number of books in the home.

The ratio of the number of homes included in this study to the total population is not the same for each of the four towns. It varies rather widely. Centralia is represented by the smallest number of homes, 37, though it is three-fourths the size of Champaign, which has the largest number, 149. Gibson City and Rochelle are both small places but are well represented.

TABLE XI
POPULATION AND HOMES STUDIED

	Population (1910 Census)	No. of Homes Studied
Centralia	9,680	37
Champaign	12,421	149
Gibson City	2,086	67
Rochelle	2,732	65

These towns are situated in four sections of the state, south-central, central, east-central, and northern. It is thought by the writer that as a group they are representative qualitatively of towns of similar size in this state and probably are representative of this section of the

United States. This fact, however, must remain a matter of opinion until it has been demonstrated by similar studies of other towns.

When an attempt was made to present the relationships separately for each town, it was found that the chance variations present exerted so great an influence that relationships were frequently obscured or exaggerated. Hence it was decided to give only the combined data for the four towns.

This section considers only families which had a child in one of the four high schools at the time the data were secured. It does not touch the larger group whose children never go beyond the eighth grade. This sort of sampling necessarily provides a select class, and the results presented here must not be interpreted in any other light.

RESULTS

The facts toward which attention will be directed are relationships as expressed by coefficients of correlation. Although the data disclose

TABLE XII

CORRELATION OF EDUCATION OF PARENTS AND EDUCATION OF SONS IN CENTRALIA, CHAMPAIGN, GIBSON CITY, AND ROCHELLE

Years of Schooling of Sons	Average Years of Schooling of Parents												
	4	5	6	7	8	9	10	11	12	13	14	15	16
20.....											I		
19.....													
18.....				I	2	I						I	
17.....								I					
16.....					2	3	2	2	I	3		I	
15.....			I	I	4	3			I	I			I
14.....					4	I	I	3	4				
13.....					I	I	I	I	2				I
12.....		I	I	5	18	7	10	2	7	5	5	I	I
11.....		2	2	4	10	4	3	2	4	I			
10.....			2	4	19	7	8	4				I	
9.....	I		I	7	13	I	4	3			I		
8.....	I	7	2	10	38	2	I	5	2	2			
7.....		3	2	3	8	2		I		I			
6.....					I								
5.....													
4.....					I								

r=43±0.03

n=316

Median education of sons, 10 years

a number of others, only those existing between the schooling of the children and the schooling of the parents, rental values of the home, and number of books in the home will be presented.

a) *Schooling of parents.*—It will be noticed when the tables are examined that there is a marked concentration of cases at that point on the scale of the schooling of parents which marks the end of the grammar school. With the children there are two such points, one at

TABLE XIII

CORRELATION OF EDUCATION OF PARENTS AND EDUCATION OF DAUGHTERS IN
CENTRALIA, CHAMPAIGN, GIBSON CITY, AND ROCHELLE

Years of Schooling of Daughters	Average Years of Schooling of Parents												
	4	5	6	7	8	9	10	11	12	13	14	15	16
19.....												I	
18.....													
17.....							I	I		I			
16.....				I	I	I	2	2	2	4	2	2	I
15.....		I			2	I		2	I		I		
14.....			2		I	3	4	2	5	I			2
13.....			2		3	5	2	5	4	I	I		
12.....		I	3	4	24	10	7	5	4	2	6	3	
11.....			I	I	I	10	2	I	2	I	2		
10.....			4	5	11	3	2	3	I	I	I		4
9.....				5	9	3	I						
8.....	I	3		11	35	5	5	I	I	I			
7.....		I	I	3	5	I							
6.....													
5.....													
4.....		I											

$$r = 0.42 \pm 0.03$$

$$n = 290$$

Median education of daughters, 11 years

the end of the grammar school and the other at the end of high school, with possibly a third at the end of college. Such concentrations disturb the curve of distribution and modify conditions somewhat. The relationships between the schooling of the children and the schooling of the parents are approximately the same for both sons and daughters, 0.43 ± 0.03 for the former (Table XII) and 0.42 ± 0.03 for the latter (Table XIII).

b) *Schooling of foreign-born parents.*—Out of the total number of homes, 318, 29 had foreign-born parents and 35, one foreign-born and one native-born (Table XIV). The number of homes where both of

TABLE XIV
PARENTAGE—NUMBER OF FAMILIES

	Both Parents Foreign Born	One Parent Foreign Born	Both Parents Native Born
Centralia.....	4	2	31
Champaign.....	7	17	125
Gibson City.....	10	8	49
Rochelle.....	8	8	49
Total.....	29	35	254

the parents were foreign born is too small to furnish any reliable coefficients of relationship.

Only a few of the foreign-born parents have had more than a common-school training, while the children have done a little better. It must be

TABLE XV
CORRELATION OF SCHOOLING OF FOREIGN-BORN PARENTS
AND SCHOOLING OF THEIR SONS

Years of Schooling of Sons	Average Years of Schooling of Parents					
	5	6	7	8	9	10
15.....		1				
14.....						
13.....						
12.....				2		4
11.....			1	2		
10.....			1	3		1
9.....			2	1		
8.....	5		4	5		
7.....				3		
6.....				1		

remembered in reading Tables XV and XVI that parents are duplicated where more than one older child no longer in school was in the family. Hence, although five boys and six girls came from homes where the average schooling of the parents was ten years, they came from four

families, while two homes furnished the nine children who came from homes where the average schooling of the parents was five years.

TABLE XVI
CORRELATION OF SCHOOLING OF FOREIGN-BORN PARENTS
AND SCHOOLING OF THEIR DAUGHTERS

Years of Schooling of Daughters	Average Years of Schooling of Parents					
	5	6	7	8	9	10
15.....	1					
14.....		1				
13.....						
12.....		2	1	3		2
11.....						
10.....						1
9.....			1	1	1	
8.....	3		3	5	2	3
7.....			2	4		
6.....						

c) *Schooling of farm parents.*¹—Two hundred and ninety-nine of the children reported the occupations of their fathers (Table XVII). Of this total, 76, or about 25 per cent, were engaged in farming. This

TABLE XVII
RATIO OF RURAL TO OTHER OCCUPATIONS

	Farmers	Other Occupations
Centralia.....	4	33
Champaign.....	17	116
Gibson City.....	26	38
Rochelle.....	29	36
Total.....	76	223

number provided a group large enough to be fairly representative. In this group 84 sons and 61 daughters were reported as being no longer in school. The relationships between the schooling of these children and

¹ Some of these parents may reside in town, though they consider themselves farmers.

the average schooling of their parents are 0.35 ± 0.06 for the boys (Table XVIII) and 0.47 ± 0.07 for the girls (Table XIX).

TABLE XVIII
CORRELATION BETWEEN EDUCATION OF FARM PARENTS AND
EDUCATION OF THEIR SONS

Years of Schooling of Sons	Average Years of Schooling of Parents									
	4	5	6	7	8	9	10	11	12	13
16.....					1	1				
15.....						2			1	
14.....									1	
13.....							1			
12.....				2	2	2	2	1	1	1
11.....					1	2			1	
10.....				1	7	4	4			
9.....			1	3	6	1	2			
8.....	1	5		2	15	2	1			
7.....				1	4	2				

$r = 0.35 \pm 0.06$

$n = 84$

Median education of sons, 9 years

TABLE XIX
CORRELATION BETWEEN EDUCATION OF FARM PARENTS AND
EDUCATION OF THEIR DAUGHTERS

Years of Schooling of Daughters	Average Years of Schooling of Parents									
	4	5	6	7	8	9	10	11	12	
15.....					1				1	
14.....					1		1	1		
13.....					2	1	1	1		
12.....					7	2				
11.....					2	1				
10.....				3	2	1	1			
9.....				3	1	1				
8.....	1	2		3	12	3	1			
7.....				2	3					

$r = 0.47 \pm 0.07$

$n = 61$

Median education of daughters, 9 years

d) *Schooling of town parents.*—The fathers who were engaged in occupations other than farming had 232 sons and 229 daughters no longer in school (Tables XX, XXI). The correlations between the

TABLE XX
CORRELATION BETWEEN EDUCATION OF TOWN PARENTS AND
EDUCATION OF THEIR SONS

Years of Schooling of Sons	Average Years of Schooling of Parents												
	4	5	6	7	8	9	10	11	12	13	14	15	16
20											1		
19													
18				1	2	1							1
17								1					
16					1	2	2	2	1	3		1	
15			1	1	4	1				1			1
14					4	1	1	3	3				
13					1	1		1	2				1
12		1	1	3	16	5	8	1	6	4	5	1	1
11		2	2	4	9	2	3	2	3	1			
10			2	3	12	3	4	4				1	
9	1			4	7		2	3			1		
8		2	2	8	23			5	2	2			
7		3	2	2	4			1		1			
6					1								
5													
4					1								

$$r = 0.30 \pm 0.04$$

$$n = 232$$

Median education of sons, 11 years

schooling of these children and the average schooling of their parents are 0.30 ± 0.04 for the sons and 0.35 ± 0.04 for the daughters.

e) *Sex relationships.*—No important sex differences were found. The correlation between fathers and sons in the matter of years of schooling received is practically identical with that between the mothers and daughters. The former is 0.44 ± 0.03 (Table XXII); the latter, 0.43 ± 0.03 (Table XXIII).¹

¹ Some of the children reported the schooling of but one parent. Hence the total figures given in Tables XXII and XXIII are slightly larger than those in Tables XII and XIII.

TABLE XXI
CORRELATION BETWEEN EDUCATION OF TOWN PARENTS AND
EDUCATION OF THEIR DAUGHTERS

Years of Schooling of Daughters	Average Years of Schooling of Parents												
	5	6	7	8	9	10	11	12	13	14	15	16	
19.....												1	
18.....													
17.....													
16.....			1	1	1	2	2	2	4	2	2	1	
15.....	1			1	1	1	2				1		
14.....		2				3	3	1	5	1			2
13.....		2		1	4	1	4	4	1	1			
12.....	1	3	4	17	8	7	5	4	2	6	3		
11.....		1	1	8	1	1	2	1	2				
10.....		4	2	9	2	1	3	1	1	1			4
9.....			2	8	2	1							
8.....	1		8	23	2	4	1	1	1				
7.....	1	1	1	2	1								
6.....													
5.....													
4.....	1												

$r = 0.35 \pm 0.04$

$n = 229$

Median education of daughters, 12 years

TABLE XXII
CORRELATION BETWEEN EDUCATION OF FATHERS AND EDUCATION
OF THEIR SONS

Years of Schooling of Sons	Years of Schooling of Fathers																	
	0	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
20.....																		1
19.....																		
18.....							4								1			1
17.....										1								
16.....							4	1	2		5		2		1			
15.....					1		5	1		1	1		1		1			
14.....							6	1		3	2							
13.....							2			2	1						1	
12.....					2	3	28	2	2	2	16		2	2	5			1
11.....			1	2	1	4	12	2	1	2	6		1	1				
10.....			1		3	1	24	2	5		4		1					
9.....	1			1	1	3	18	1	3	1	1						1	
8.....		1		5	6	5	48	2			7						1	
7.....			2	1	2	3	6	2			2							
6.....							1											
5.....																		
4.....							1											

$r = 0.44 \pm 0.03$

$n = 317$

f) *Rent*.—It may be rather unfair to combine the figures for the four towns, because rental values vary from town to town for approximately the same accommodations. Such variations tend to reduce the figures

TABLE XXIII
CORRELATION BETWEEN EDUCATION OF MOTHERS AND EDUCATION OF THEIR DAUGHTERS

Years of Schooling of Daughters	Years of Schooling of Mothers												
	4	5	6	7	8	9	10	11	12	13	14	15	16
19.....										1			
18.....													
17.....					1			1	1				
16.....					3			6	6		1		3
15.....					3	1			1		2		
14.....			2	1	4	1	2		8	2	1		2
13.....			1		6	1	2	2	9	2		1	
12.....	1		2	3	27	3	12	4	12	3	1	1	3
11.....				1	13	1	1	2	3		1		
10.....		1	1	3	16	2	2	2	5		1		1
9.....			2	1	13		3						
8.....		4	2	5	44		4	2	2		1		
7.....			3	1	6		1						
6.....													
5.....													
4.....	1												

$r = 0.43 \pm 0.03$
 $n = 300$

of relationship obtained, though perhaps not as much as might be expected. There is probably a positive correlation between rental values and the opportunities for education offered by a community. If such be the case, it must counteract the effects of the variations.

TABLE XXIV
OWNERS AND RENTERS

	Owners	Renters
Centralia.....	25	3
Champaign.....	85	21
Gibson City.....	45	10
Rochelle.....	17	7
Total.....	172	41

Only 41 out of the 213 families which gave the information pay rent (Table XXIV). Since the pupils were requested to estimate the rental values of their homes when their parents owned them, most of the rental values are estimates. This fact introduces a certain amount of unreliability into the data which would tend to reduce the correlation figures below their probable values. Even if such be the case, the correlation coefficients are large enough to indicate a clear relationship

TABLE XXV
CORRELATION OF RENTAL VALUES* AND EDUCATION OF SONS

Years of Schooling of Sons	Rent of Home per Month, Dollars													
	10	15	20	25	30	35	40	45	50	55	60	65	70	75
20.....						1								
19.....														
18.....					2			2						1
17.....					1									
16.....	1	1		2	3	2	3		1					
15.....	1	1					1	2			1			
14.....	1	1		4	1					2			2	
13.....	1					1				1				
12.....	2	5	8	9	6	7	9	2	4		4	1		
11.....		3	7	5		4	1	1	1		1			
10.....	3	6	3	4	2	3		1	3				3	
9.....	7	7	4	3	2	1	1							
8.....	8	13	13	11	4	2	2							
7.....	2	4	4	1										
6.....						1								
5.....														
4.....	1													

$r = 0.40 \pm 0.04$

$n = 241$

* The rental values were grouped as follows: The \$10 group includes all living in homes worth \$10 or less per month, the \$15 group includes all values between \$11 and \$15, etc.

(Tables, XXV, XXVI). The correlation between rental values and schooling of sons is 0.40 ± 0.04 and between rental values and schooling of daughters it is 0.24 ± 0.04 . These families were a select group from which those children who never reached high school had been eliminated. Where are those families located in rental distribution whose children never went beyond the elementary school? An answer will be suggested by Part IV.

g) *Number of books in the home.*—The pupils found it more difficult to estimate the number of books in the home than to estimate the rental

TABLE XXVI

CORRELATION OF RENTAL VALUES AND EDUCATION OF DAUGHTERS

Years of Schooling of Daughters	Rent of Home per Month, Dollars																		
	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
17.....						2													
16.....		I			2	3	5	I	I			I		I					I
15.....		I	I		I	I													
14.....	I	3	4	I		4	I	I		I									
13.....	I	3	I	4	4	I	4		I	2			I						
12.....	7	10	8	9	7	2	6		I		I								
11.....		4	4	2				I		I				I					
10.....	5	5	8	5	I	I		I	2		I								
9.....	I	5	I	2	2	I	I				I								
8.....	10	11	9	4	4		11	4			2		I						
7.....	I	3	I			I													
6.....																			
5.....																			
4.....	I																		

$$r = 0.24 \pm 0.04$$

$$n = 219$$

values of the home. The best showing was made by Champaign, where the data were furnished by the pupils while under the direct supervision of the writer (Table XXVII). Here the pupils were urged to estimate

TABLE XXVII

NUMBER WHO ESTIMATED THE BOOKS IN THE HOME

Centralia.....	18
Champaign.....	108
Gibson City.....	46
Rochelle.....	42

and were told that a rough estimate was better than none. As an aid in estimating it was suggested that a shelf three feet long held about twenty-five ordinary books. Chance remarks dropped by some of the pupils later disclosed the fact that some who had many books in their homes made rather wild estimates. In every case reported to the writer,

TABLE XXVIII

CORRELATION OF NUMBER OF BOOKS IN THE HOME AND THE SCHOOLING OF SONS

Years of Schooling of Sons	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	400	500	600	700
20									1				
19													
18							3	1					1
17								1					
16	1		1		2		5		1		2		
15			1	1	2	2		1		1			1
14								2	2	1			1
13				1	1				3				
12	2		5	2	10	7	6	4	6	4	5		1
11	2	1	3		3	2	2	4	1	1	1		
10	5		13		6	1	3	2	2		1		
9	5	2	6		3	2	2	2	1				
8	7	5	8	2	13		3	1	2	2	3		1
7	2	1	3		3		2						
6					1								
5													
4						1							

$r = 0.39 \pm 0.04$

$n = 227$

TABLE XXIX

CORRELATION OF NUMBER OF BOOKS IN HOME AND THE SCHOOLING OF DAUGHTERS

Years of Schooling of Daughters	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	400	500	600	700
17			1										
16			1		4	1	3	3	3		2		2
15						1	1	1	1	1			
14	1		2	1	2	1	4	2		2	1		2
13			1		4	1	1	4	2	1	2		
12	3	3	8		9	5	5	2	1	4	5		4
11		2	1		4	1		5		1			
10	1	1	7	1	3	1	5	2	1		1		
9	2	2	4	1	2		2		3				1
8	10	3	6	1	9	1	2		4		1		
7	1		5		2			1					
6													
5													
4	1												

$r = 0.18 \pm 0.04$

$n = 209$

however, the estimates were low, never high. Those who had few books in their homes made comparatively accurate estimates.

The four towns were represented by 214 homes containing 227 sons and 209 daughters. The coefficient of correlation between the number of books in the home and the schooling of the sons is 0.39 ± 0.04 (Table XXVIII), while the like relationship for the daughters is 0.18 ± 0.04 (Table XXIX).

SUMMARY AND CONCLUSIONS

The coefficients of correlation presented in this section are summed up in Table XXX.

TABLE XXX

Correlated With	Schooling of Sons	Schooling of Daughters
Average schooling of parents.	0.43 ± 0.03	0.42 ± 0.03
Average schooling of farm parents. . . .	0.35 ± 0.06	0.47 ± 0.07
Average schooling of town parents. . . .	0.30 ± 0.04	0.35 ± 0.04
Schooling of father.	0.49 ± 0.03	.....
Schooling of mother. . . . .	.....	0.43 ± 0.03
Rental values.	0.40 ± 0.04	0.24 ± 0.04
Number of books in the home.	0.39 ± 0.04	0.18 ± 0.04

These statistics show in a general way the existence of definite relationships between the home conditions of parents of high-school pupils and the amounts of schooling which the children receive.

This part supports the general conclusions arrived at in the Decatur study.

PART IV

PERSISTENCE IN SCHOOL AND HOME CONDITIONS IN URBANA

The data presented in Part IV were secured through the personal canvass made by the writer. Only the facts collected from the homes of whites, 234 in number, are used. Some of these homes had no children who had completed their education. Such homes will not be considered where relationships between schooling and various home conditions are presented. Where the facts are such that it makes no difference whether the children have completed their education or not, the entire group of 234 homes will be used. Any special selection of homes made will be mentioned when the facts are discussed.

The method followed in securing the material presented in Part IV is open to the criticism that, since the canvasser knew what he was seeking, some of the items may have been more or less unconsciously weighted. Personally, the writer thinks that this criticism need not be taken seriously. Throughout the canvass the writer kept as scientific an attitude as possible and faithfully recorded all answers even though they failed to fit his preconceived ideas. As a means of observing this open-mindedness the facts given in Part IV were collected before those presented in Part III had been evaluated.

Urbana is composed of a rather homogeneous population. In the few homes which have foreign-born parents all speak the English language. Out of the total number of homes there were only five in which both parents were foreign born. These were people of German ancestry. Only 23 fathers and 8 mothers were born outside the United States (Table XXXI). A few of the parents born in this country came from homes in which only a foreign language was spoken (Table XXXII).

SECTION I. SCHOOLING OF PARENTS AND CHILDREN

The relationships existing between the education, as measured by years of schooling, of parents and children will be the theme of this section. In the main the data are approximations, estimates of all of the members of a family fourteen years of age or older given by some member of each family. The age fourteen was taken as the minimum because

the compulsory education law operates until this age is reached, and those under fourteen have not legally completed their education. The local public-school system was used as a standard for comparison and all estimates were made by comparisons with it. An appreciable number of these people were educated in other schools—some in schools of other states. This fact introduces a small degree of unreliability. The writer feels, however, that, if the true amounts of schooling of these individuals could be ascertained, they would not vary from the amounts given here by more than a year or two, except in possibly five or ten

TABLE XXXI

	BIRTHPLACE OF	
	Fathers	Mothers
United States.....	211	226
Germany.....	9	6
England.....	4	1
Canada.....	44	.....
Ireland.....	3	.....
Sweden.....	2	.....
Scotland.....	1	1
Total foreign-born.	33	8

TABLE XXXII

	LANGUAGE COMMONLY SPOKEN BY PARENTS OF	
	Fathers	Mothers
English.....	219	223
German.....	12	10
Scotch.....	1	1
Swedish.....	1	.....
Norwegian.....	1	.....

cases where it was impossible to do more than estimate roughly the education of the individuals concerned. Such cases were those of dead parents and families where the father had deserted the home. In nearly all cases where there was any doubt, the amount listed is probably an overestimation instead of an underestimation. It was more difficult to estimate the education of those who had never gone beyond the elementary school.

The educational level of a home, however, is probably a rather constant factor, changing but little after the parents have started to rear their children.

RELATIONSHIPS BETWEEN PARENTS AS TO NUMBER OF YEARS OF SCHOOLING

Fathers and mothers are much alike with reference to the number of years of schooling they have received. Mothers as a group are slightly less variable in the matter of education than fathers (Fig. 1). The mode and the median fall at eight years for both mothers and fathers. The

last two years of the elementary school is where a large number of parents finished their schooling, probably because many of them were reared in the country, and rural schools did not extend beyond the eighth grade. Since the high school constitutes another division of the school, we again

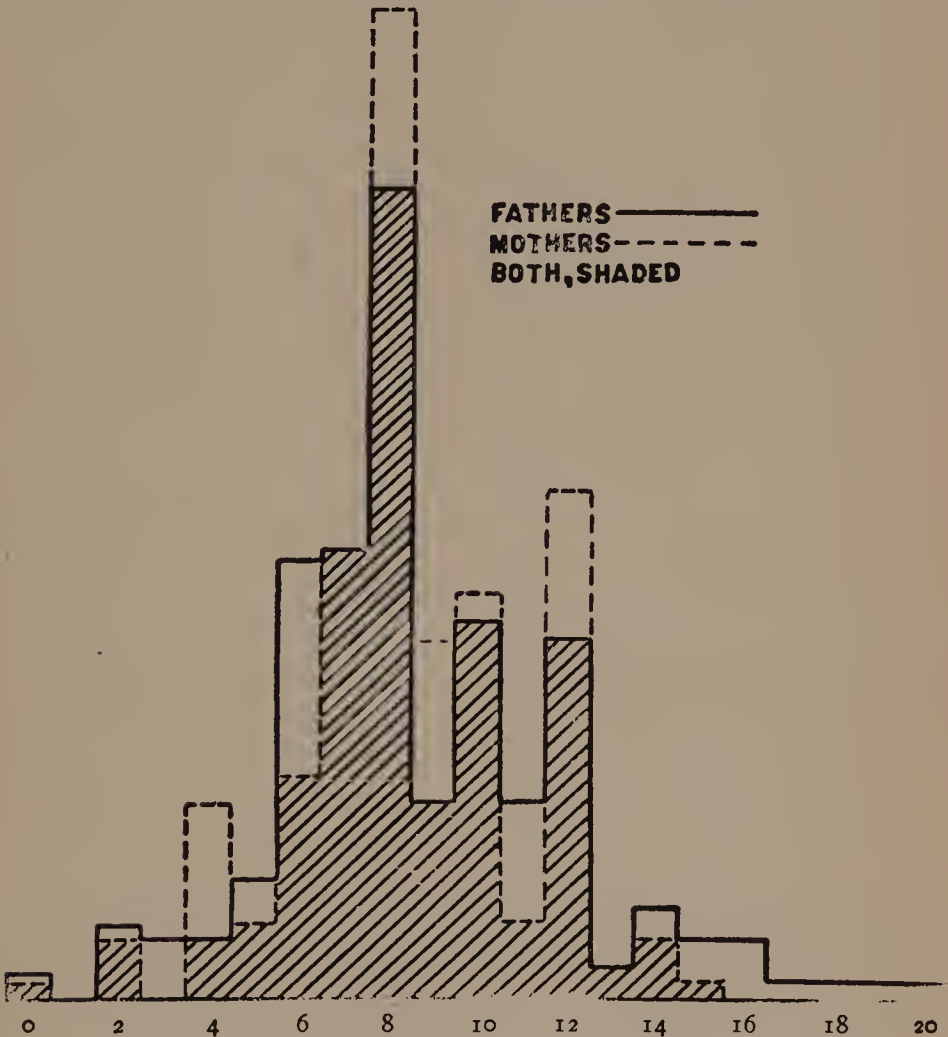


FIG. 1.—Education of Urbana Fathers and Mothers: Years of Schooling

find, what common-sense has already taught us, that the end of the high school was also a stopping-place for a large number. Only a small number of people went to a college or university. This is somewhat surprising, until an explanation is sought, for Urbana has been the seat of

the state university since its foundation in 1869. When it is remembered that university work until quite recently did little except prepare for the professions, this scarcity of college people seems more natural. Further,

TABLE XXXIII

CORRELATION BETWEEN EDUCATION OF FATHERS AND EDUCATION OF MOTHERS

Years of Schooling of Fathers	Years of Schooling of Mothers															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
20										1						
19													1			
18															1	
17									1							
16													3	1		
15									1	1	1		1			
14									1		1		3			1
13									1				1			
12					1			1	1	5		1	12		3	
11									6	3	2		1	1		
10								1	7		10	2	5			
9					1			1	3	4	1		3			
8			1				1	1	32	5	9	2	3			
7					2		3	15	8		1		1			
6					4	3	9	7	2	2	2					
5					1	2	2	2	1							
4					2				2							
3		1						1		2						
2			1		1			1	1	1						
1																
0			1		1											

$r = 0.65 \pm 0.03$

$n = 231$

Median education of fathers and mothers, both 8 years

many of these professional people have been eliminated through the rejection of data from the university residence district. The correlation¹ between the schooling of the father and the schooling of the mother is high, being 0.65 ± 0.03 (Table XXXIII).

¹ It might be well to explain, at this point, what is meant by a coefficient of correlation. Coefficients of correlation are measures of resemblance between quantities found coexisting under varying conditions. There may be complete correspondence, $+1.00$ (the $+$ sign is omitted in this study), or the exact opposite, -1.00 . Usually, however, the measures secured contain chance errors and a correlation of 1.00 , positive (or negative), is almost never obtained. A coefficient of 0.60 or more, in this study, indicates a high degree of correspondence and becomes quite significant.

RELATIONSHIPS BETWEEN PARENTS AND CHILDREN

1. *Fathers and sons.*—The curve (Fig. 3) of this relationship looks as if some factor such as the compulsory education law had modified its general character. At any rate, the coefficient of correlation is low, being 0.47 ± 0.03 (Table XXXIV).

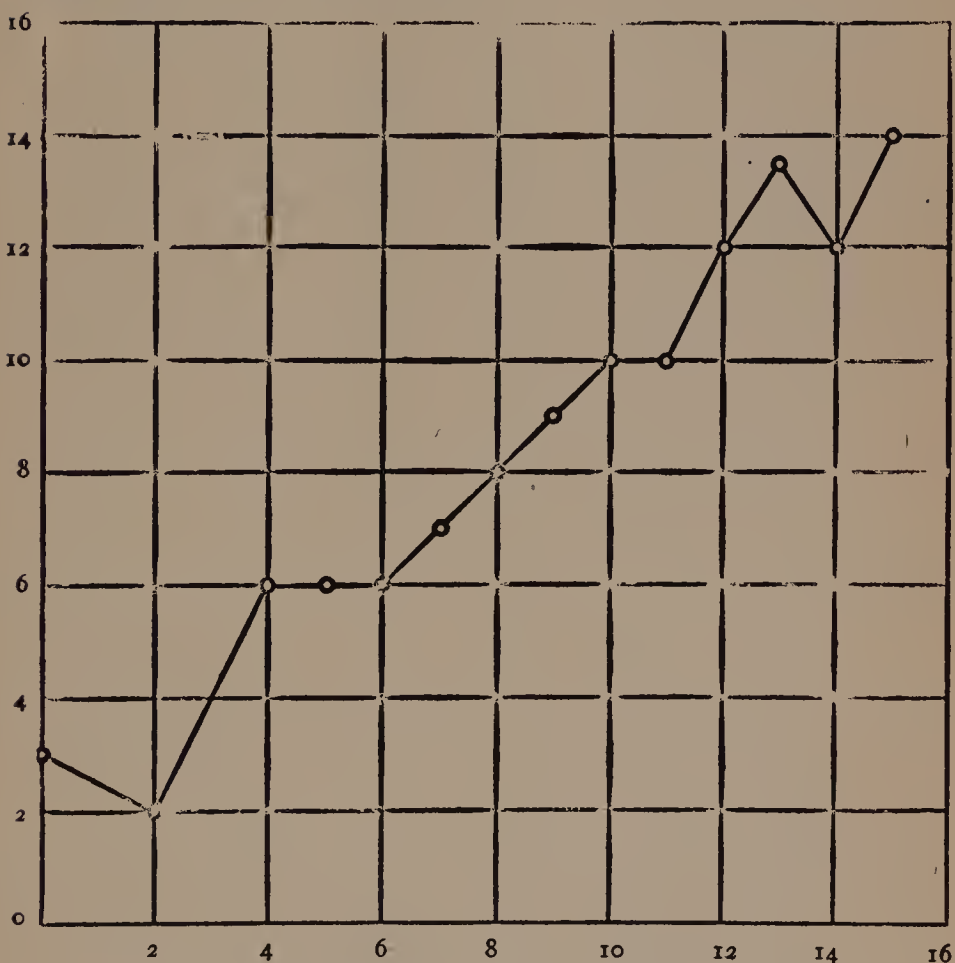


FIG. 2.—Correlation between Education of Fathers and Mothers

2. *Mothers and daughters.*—This relationship is much higher than that between fathers and sons and the curve (Fig. 4) lacks the flattened appearance at the lower end which characterizes the other. This may be due to the tendency of girls to stay in school longer than boys, or it may be a mere chance variation. The coefficient of correlation is $0.60 \pm$

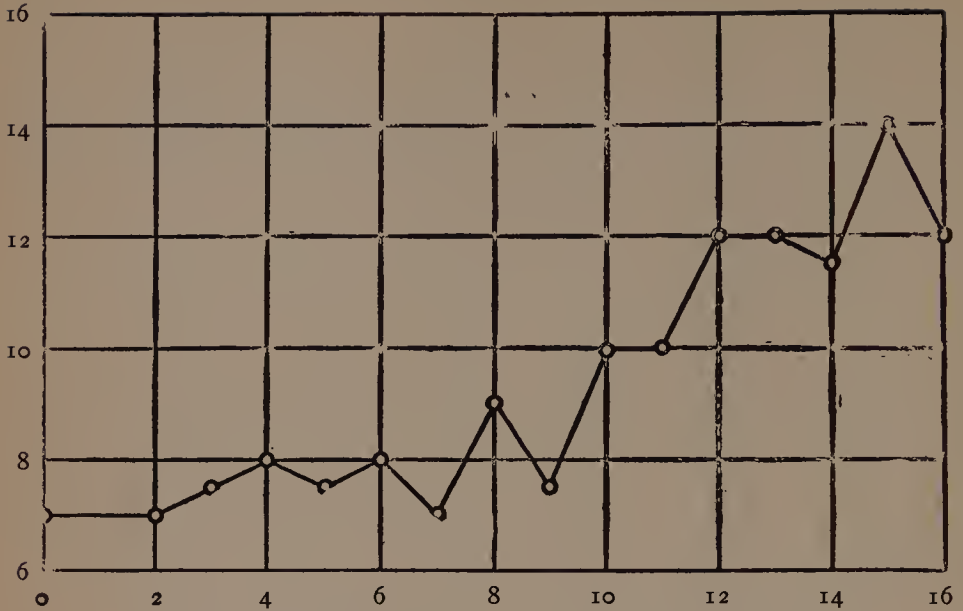


FIG. 3.—Correlation between Education of Fathers and Sons

TABLE XXXIV

CORRELATION BETWEEN EDUCATION OF FATHERS AND EDUCATION OF SONS

Years of Schooling of Sons	Years of Schooling of Fathers																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
18													1					1			
17								1					1								
16								1			2				1	1					
15											1		2								
14									2				1	1		1					
13									2		1	2	1		2						
12			1					4	5		3	1	5			1	1				
11				1	1		1		5		1	2	2				1				
10						2		3	4			1	3	1	1						
9			1			2	4	5	4	1	1				1						1
8				2	2	2	14	4	10	3	5	2	1		1						
7	5		2	1		2	6	14	7	1	1	1	3								
6			2				6	3	2	1	1	1	1								
5	2			2		1	4		1	1		1									
4			1		1	3		1		1											
3				2																	

$r = 0.47 \pm 0.03$

$n \approx 224$

Median education of sons, 8 years

0.03 (Table XXXV). The daughter who is indicated as illiterate was an epileptic, unable to attend school.

TABLE XXXV

CORRELATION BETWEEN EDUCATION OF MOTHERS AND EDUCATION OF DAUGHTERS

Years of Schooling of Daughters	Years of Schooling of Mothers											
	2	3	4	5	6	7	8	9	10	11	12	13
19											I	
18												
17												
16					I		4		3		II	
15							2				2	
14								I		I	2	
13							I	I	4	2		
12	I					4	II	2	II	3	7	I
11			2			2	5	2	I		2	
10			I		5	3	II	I	I		3	
9						4	4	3			2	
8			3	I	8	6	17	4	5		2	
7			3	I	9	6	10	I	2			
6	3		2	2	2	3	3					
5	2		2	3		3						
4												
3					I		I					
2												
1												
0					I							

$r = 0.60 \pm 0.03$

$n = 234$

Median education of daughters, 9 years

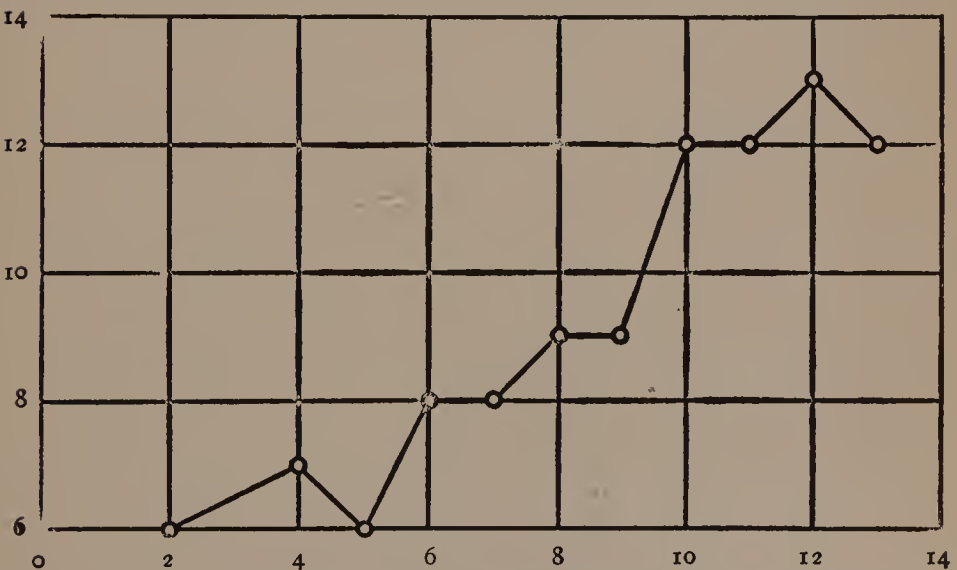


FIG. 4.—Correlation between Education of Mothers and Daughters

3. *Fathers and daughters.*—This relationship is higher than that between fathers and sons and lower than that between mothers and daughters. The difference is so little in either case that it cannot legitimately be made the basis of any conclusion. The coefficient of correlation is 0.56 ± 0.03 (Table XXXVI).

TABLE XXXVI

CORRELATION BETWEEN EDUCATION OF DAUGHTERS AND EDUCATION OF FATHERS

Years of Schooling of Daughters	Years of Schooling of Fathers																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
19													1								
18																					
17																					
16							1	4	1	1	1	2	2	4	2						
15										2					1	1					
14											1		1		2						
13			1						1		3	1	1				1				
12			1				2	3	12	2	4	5	8		1			1			
11			2			1	1	2	3	2	2	1	1								
10						1	4	4	8	1	2		2								
9							2	3	2	2			1	1							1
8			3	2	3	1	11	12	8	1	5	1									
7				1	2	2	10	10	6		1										
6	3		3		1		4	3			2										
5			1			1	3						1								
4																					
3					1	1															
2																					
1																					
0							1														

$r = 0.56 \pm 0.03$

$n = 231$

4. *Mothers and sons.*—This relationship is almost the same as the preceding, the coefficient of correlation being 0.55 ± 0.03 (Table XXXVII).

5. *Parental average and children.*—When the average schooling of each family is correlated with the schooling of the children, a closer relationship is revealed. The coefficients of correlation are 0.65 ± 0.03 for the sons (Table XXXVIII) and 0.62 ± 0.03 for the daughters (Table XXXIX), a rather high degree of correspondence.

TABLE XXXVII

CORRELATION BETWEEN EDUCATION OF SONS AND EDUCATION OF MOTHERS

Years of Schooling of Sons	Years of Schooling of Mothers															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
18													1		1	
17											1				1	
16							1		3				2			
15									1		1				1	
14									3				2			
13									2	1	1	1	2			1
12					1			1	4	2	5	1	5		1	
11							1	1	4	1	2		4			
10						1		2	5		2		2			
9				2		1	5	5	4	2		1				
8			1		3		3	11	18	5	2		4			
7					6	1	5	9	10	4						
6			4		4	1	4	3	3		1					
5	1				3	1	3	2	1	1						
4			1		5			1								
3								2								

r = 0.55 ± 0.03

n = 214

TABLE XXXVIII

CORRELATION BETWEEN EDUCATION OF SONS AND AVERAGE EDUCATION OF PARENTS

Years of Schooling of Sons	Average Years of Schooling of Parents														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
18														1	1
17										1				2	
16						1		1	2						
15										2				1	
14								2			1	2	1		
13								2	1	2		1	1	1	
12					2			2	4	5	1	3	1	1	
11					1	1		3	3	2		2			1
10					1	2	3	3	2	1		3			
9			1		2	2	7	3	2	1		1			1
8			1	1	4	13	8	13	1	2	2	2	1		
7			1	4	4	6	13	6	1	2					
6	4	1		1	2	4	3	2	1	1					
5	1	2		1	1	5	1		1						
4		1		4		1									
3				2											

r = 0.65 ± 0.03

n = 220

6. *Sons and better-educated parent.*—When the relationship which existed between the better-educated parent of each family and the sons in the matter of schooling was evaluated, it furnished a correlation coefficient of 0.60 ± 0.03 (Table XL).

TABLE XXXIX
CORRELATION BETWEEN EDUCATION OF DAUGHTERS AND AVERAGE
EDUCATION OF PARENTS

Years of Schooling of Daughters	Average Years of Schooling of Parents													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
19.....												1		
18.....														
17.....														
16.....						1		3	2	2		5	5	1
15.....									2				1	
14.....										2			2	
13.....					1				2	3		1		1
12.....					2	2	3	4	11	7		10		
11.....			1		2	1	2	3	2	3		1		
10.....					1	4	4	8	4			1		
9.....							5	4	1	1		1		1
8.....				2	1	3	14	11	9	3	2	2		
7.....				2	2	12	8	7	1					
6.....	3		1	3	2	3	2	1	1					
5.....		2		3	4			1						
4.....														
3.....					1	1								
2.....														
1.....														
0.....						1								

$r = 0.62 \pm 0.03$
 $n = 232$

7. *Sons and more poorly educated parent.* This relationship proved to be nearly the same as the preceding, being slightly lower, 0.57 ± 0.03 (Table XLI).

Comparisons.—All the sons and daughters who have been given in the data thus far presented in this section were reported as having completed their education. A few, perhaps, may reconsider their decisions and continue their schooling later. On the other hand, the parents passed the customary ages for school attendance long ago. Hence, when the amounts of schooling which the children have received are compared

TABLE XL

CORRELATION BETWEEN EDUCATION OF SONS AND EDUCATION OF BETTER-EDUCATED PARENT

Years of Schooling of Sons	Years of Schooling of Better-Educated Parent																			
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
18.....																				
17.....																				
16.....																				
15.....																				
14.....																				
13.....																				
12.....																				
11.....																				
10.....																				
9.....																				
8.....																				
7.....																				
6.....																				
5.....																				
4.....																				
3.....																				

r = 0.60 ± 0.03

n = 216

TABLE XLI

CORRELATION BETWEEN EDUCATION OF SONS AND EDUCATION OF MORE POORLY EDUCATED PARENT

Years of Schooling of Sons	Years of Schooling of More Poorly Educated Parent														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
18.....															
17.....															
16.....															
15.....															
14.....															
13.....															
12.....															
11.....															
10.....															
9.....															
8.....															
7.....															
6.....															
5.....															
4.....															
3.....															

r = 0.57 ± 0.03

n = 216

with the amounts received by their parents a generation earlier, an incomplete quantity is being compared with a complete one.

1. Amounts of education received by fathers and sons: The fathers have received almost as much schooling as their sons. The difference

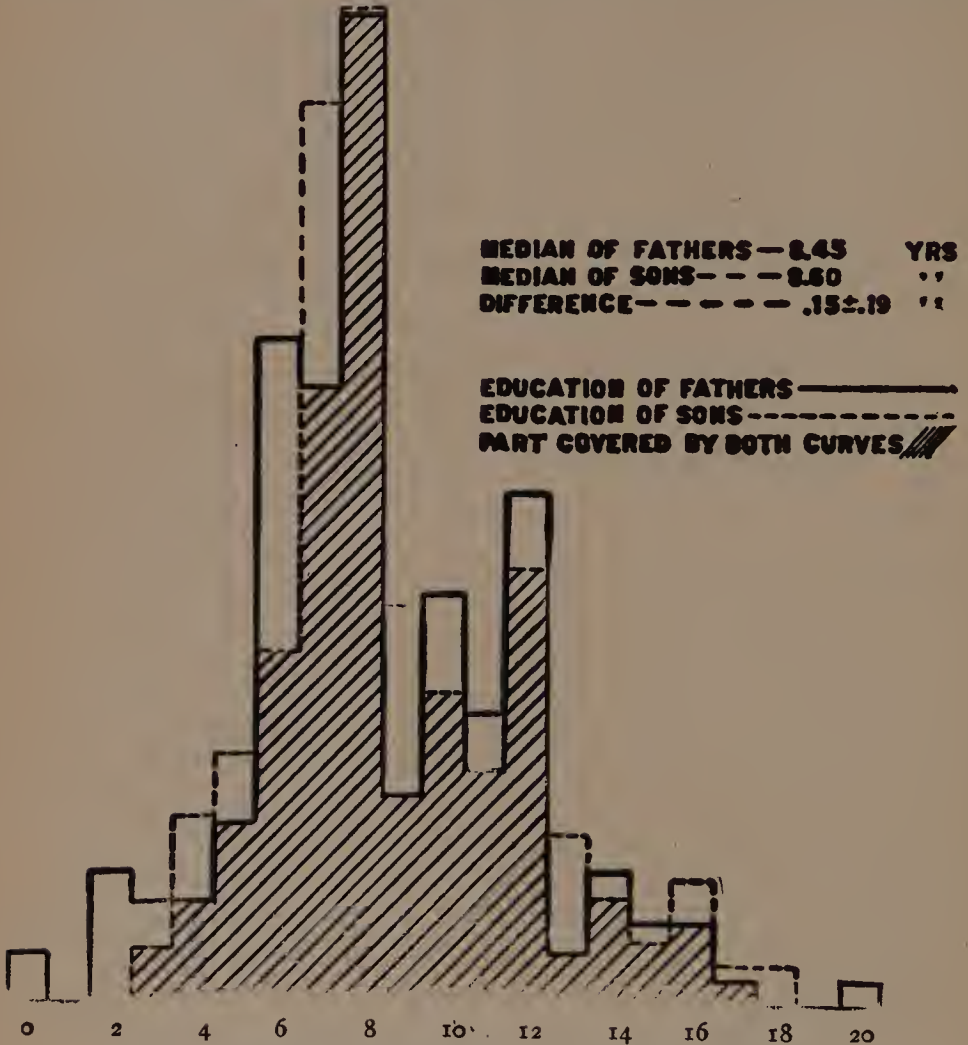


FIG. 5.—Education of Fathers and Sons: Years of Schooling

between the medians, 8.45 years for the fathers and 8.60 years for the sons, is only 0.15 ± 0.19 year (Fig. 5). When these comparative surfaces of frequency are examined, it is seen that a few more fathers are at the lower end and a few more sons at the upper end. When the character of the school work completed by both groups is taken into consid-

eration, it must be admitted that the present generation, although apparently attending school for no more years than its predecessor, has enjoyed a longer school year and a much richer curriculum.

2. Amounts of education received by the mothers and daughters: The mothers have, on the average, received one year less schooling than

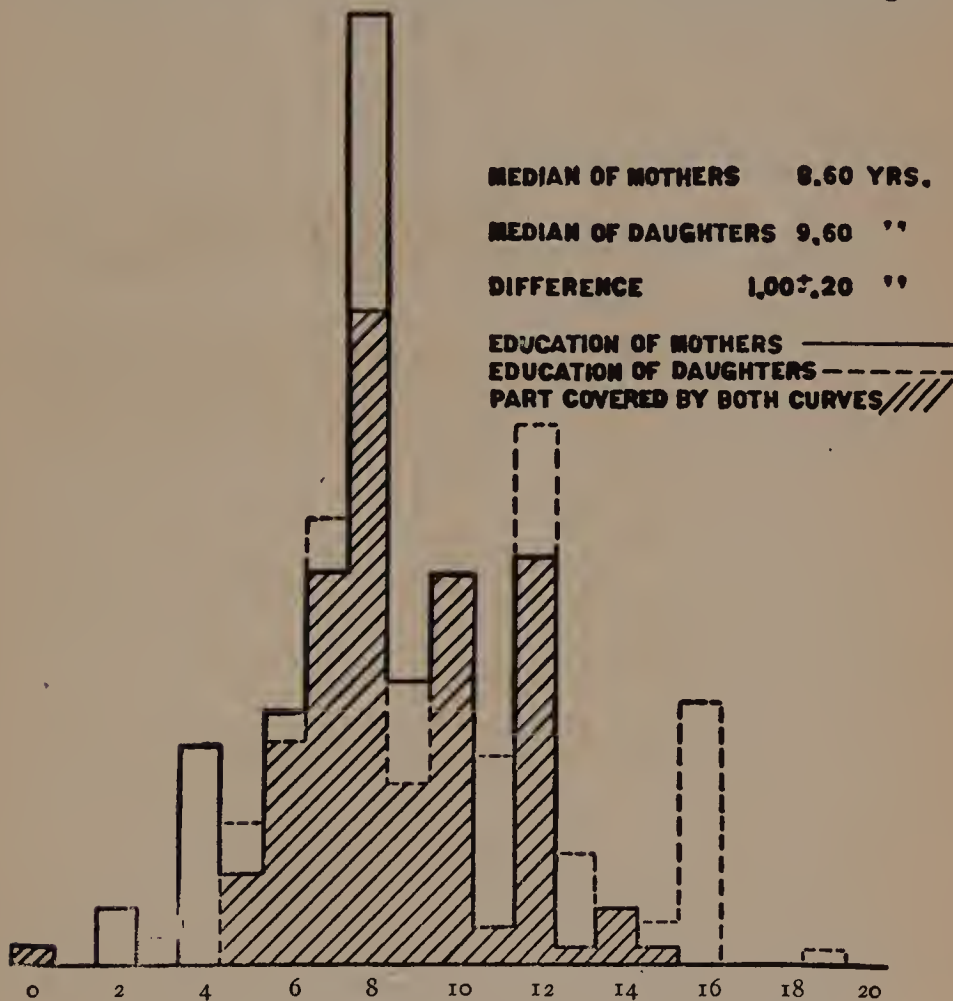


FIG. 6.—Education of Mothers and Daughters: Years of Schooling

their daughters. The median number of years of schooling received is 8.6 years for the mothers and 9.6 years for the daughters. A difference of 1.00 ± 0.20 years (Fig. 6).

These slight differences may be explained partly by the increased educational opportunities offered to the present generation and partly by the desire on the part of parents, especially those poorly educated,

to give their children a little better education than they themselves received. The nature of this difference may, perhaps, be seen best in a comparison of the numbers who received more, the same, or less education than their parents (Tables XLII, XLIII, XLIV). In but few

TABLE XLII

COMPARISON OF EDUCATION OF CHILDREN WITH AVERAGE EDUCATION OF PARENTS

	Average Years of Schooling, Parents													
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Sons														
Received more.....	5	4	3	7	16	25	20	16	13	11	2	3	6	1
Received same.....	...	...	...	4	1	4	13	13	2	1	...	3	1	...
Received less.....	...	...	...	2	...	6	4	8	4	6	2	8	2	4
Daughters														
Received more.....	3	2	4	9	13	34	25	22	23	17	...	7	8	1
Received same.....	...	...	...	...	4	3	8	9	1	...	...	10	...	...
Received less.....	...	...	...	...	1	2	2	9	5	3	2	3	...	2

TABLE XLIII

COMPARISON OF EDUCATION OF CHILDREN WITH EDUCATION OF FATHERS

	Years of Schooling of Fathers																				
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Sons																					
Received more..	7	...	11	6	3	8	25	17	24	...	8	3	6	1	1	1	1	...	...	...	...
Received same..	...	...	...	1	1	6	14	10	1	...	2	5	...	...	...	...	...	...	...	...	...
Received less..	...	...	...	3	4	4	10	7	8	6	10	1	5	2	2	...	...	...	...	...	1
Daughters																					
Received more..	3	...	15	3	6	5	30	25	30	6	13	7	5	2	4	2	...	...	...	...	...
Received same..	...	...	...	...	1	1	4	10	8	2	2	1	8	...	2	1	1	...	...	...	...
Received less..	...	...	...	1	1	4	3	6	1	8	1	5	1	1	...	1	1	...	...	...	1

TABLE XLIV

COMPARISON OF EDUCATION OF CHILDREN WITH EDUCATION OF MOTHERS

	Years of Schooling of Mothers															
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sons																
Received more....	1	...	6	...	19	3	11	20	27	4	10	2	7	...	3	...
Received same....	...	...	...	...	5	1	4	9	18	4	2	...	5	...	...	...
Received less....	...	...	...	...	...	...	3	8	14	10	5	...	11	...	1	1
Daughters																
Received more....	...	...	6	...	13	4	23	19	38	7	19	4	18	...	...	...
Received same....	...	...	...	...	...	3	2	6	17	3	1	...	7	...	...	...
Received less....	...	...	...	...	...	...	2	6	14	5	7	...	9	1	...	...

cases did the children of poorly-educated parents receive less education than their parents. When the education of the children of those parents¹ who went to the eighth year or beyond is compared with that of their parents, there is no such marked increase. In comparison with the average education of these parents, 49 per cent of their sons and 64 per cent of their daughters received more education and 32 per cent of their sons and 20 per cent of their daughters received less. In comparison with these fathers 39 per cent of the sons and 59 per cent of the daughters received more, while 45 per cent of the sons and 21 per cent of the daughters received less, showing that these sons actually received less education on the average than their fathers. When the mothers are considered, both the sons and daughters received slightly better average educations, 43 per cent of the sons and 57 per cent of the daughters receiving more than their mothers, and 34 per cent of the sons and 24 per cent of the daughters, less.

Schooling of parents and progress of pupils now in school.—The children fourteen years of age and older who were reported to the writer as intending to continue their schooling were in various grades from the fifth to the last year of the university. An attempt to determine if retardation was greatest among the children of the less educated families was made by comparing each age group with a scale of "ideal progress." According to this scale a boy or girl

14	years of age should have been in the	8th grade
15	" " " " "	9th grade
16	" " " " "	10th grade
17	" " " " "	11th grade
18	" " " " "	12th grade
19	" " " " "	1st year of college
20	" " " " "	2d year of college
21-22	" " " " "	3d year of college
23-24	" " " " "	4th year of college

This scale is entirely arbitrary and is of value only to the extent that it serves as a measure of retardation and acceleration. It assumes, of course, that children enter school at six years of age, which is the general rule in Urbana. This, however, may not have been true of all the cases

¹ This comparison was limited to these parents because their education extended beyond the age affected by compulsory attendance laws. The children of parents who have less education may be kept in school by law more than through parental influence.

recorded in this study. Some may have entered at eight or nine and have progressed through the grades in the normal number of years.

When the resulting comparisons are examined, it is seen that there is a positive relationship between home conditions and the progress of the pupils. With the girls this is only 0.22 ± 0.06 (Table XLVI), while

TABLE XLV

CORRELATION BETWEEN AVERAGE EDUCATION OF PARENTS AND PROGRESS OF SONS
YET IN SCHOOL

RELATION TO PROGRESS, BOYS

Years	Average Years of Schooling of Parents									
	5	6	7	8	9	10	11	12	13	14
+2.....										I
+1.....					2	2				
0.....	2			4	4	7	4	2	2	
-1.....		4	3	7	5	3	I	2	2	
-2.....	I	2	2	5	I	2			I	
-3.....		2	I	3						
-4.....										
-5.....						I				

$$r = 0.37 \pm 0.07$$

$$n = 79$$

Average retardation, 0.96 year

TABLE XLVI

CORRELATION BETWEEN AVERAGE EDUCATION OF PARENTS AND PROGRESS OF
DAUGHTERS YET IN SCHOOL

RELATION TO PROGRESS, GIRLS

Years	Average Years of Schooling of Parents											
	5	6	7	8	9	10	11	12	13	14	15	16
+1.....	I			2	3	4	I	2		I		
0.....	4	2	2	5	4	6	4	5	2	I	I	I
-1.....	2	2	7	5	I	7	2					
-2.....		I	I	5	2	2						
-3.....	I	2		I								
-4.....			2					I				

$$r = 0.22 \pm 0.06$$

$$n = 97$$

Average retardation, 0.63 year

it is 0.37 ± 0.07 with the boys. The boys, with an average of 0.96 year retardation, were retarded more than the girls, who averaged 0.63 year.

SUMMARY AND CONCLUSIONS

The relationships presented in this section may be summed up as in Table XLVII.

TABLE XLVII

Education of fathers correlated with education of mothers	0.65 ± 0.03
“ “ fathers “ “ “ “ sons	0.47 ± 0.03
“ “ mothers “ “ “ “ daughters	0.60 ± 0.03
“ “ fathers “ “ “ “ daughters	0.56 ± 0.03
“ “ mothers “ “ “ “ sons	0.55 ± 0.03
“ “ parents “ “ “ “ sons	0.65 ± 0.03
“ “ parents “ “ “ “ daughters	0.62 ± 0.03
“ “ better-educated parent correlated with education of sons	0.60 ± 0.03
“ “ more poorly educated parent correlated with educa- tion of sons	0.57 ± 0.03
“ “ parents correlated with progress of sons	0.37 ± 0.07
“ “ parents “ “ “ “ daughters	0.22 ± 0.06

Fathers are slightly more variable with respect to number of years of schooling received than are the mothers.

The median amounts of schooling of parents and children are as follows:

Fathers, 8.45 years	Mothers, 8.60 years
Sons, 8.60 years	Daughters, 9.60 years
Difference, 0.15 ± 0.19 years	Difference, 1.00 ± 0.20 years

The boys now in school are retarded more than the girls, as indicated by an age-grade distribution.

There is a close relationship between the educational level of a home and the length of time children remain in school.

SECTION II. ECONOMIC HOME CONDITIONS

This section deals with the economic status of the families under consideration. The economic status of a family is not always apparent to a visitor. Nor can one receive a wholly reliable estimate of it from an examination of the assessor's sheets. Since this study includes families all of whose children are grown, other families with infants

taxing their resources, and all sorts of intermediate types, it is quite apparent that an index which adequately represents the economic status of each family is not easily obtainable. Three indices—rental value of home, personal property assessment, and real estate assessment—were selected as criteria, and the results bearing upon them are presented for what they are worth.

RENTAL VALUES AND SCHOOLING OF CHILDREN

Every home was assigned a rental value at the time the data were collected. This was a comparatively easy matter, for in most cases where the home was owned by the family the member who furnished the information to the writer was fairly well acquainted with rental values in the neighborhood. A little difficulty was experienced in determining rental indices for a few of the better homes which were built by their present occupants for their own use and which far surpassed all rented homes in the neighborhood in beauty and conveniences. In such cases the writer usually offered a conservative figure to some responsible member of the family for approval. Hence, nearly all the homes with rental indices of \$40 a month or more are probably underestimated. Since rental values are subject to fluctuation, the approximations given here cannot be considered as valid or representative for any considerable period of time. A further complication was due to the presence of roomers in a few homes. This tended to reduce the real rents below the values assigned to these homes. Such families were included in the group given here, although such a procedure may be open to criticism. In spite of all the disturbing influences mentioned, it is felt by the writer that the rental index is a fairly good measure of the economic status of families.

When the rental values were correlated with the amounts of schooling which the children have received, the coefficients of correlation, $0.63 + 0.03$ for the sons (Table XLVIII) and $0.64 + 0.03$ for the daughters (Table XLIX), were obtained. If the large number of disturbing factors which have affected the indices are taken into consideration, these correlations seem high.

PERSONAL PROPERTY ASSESSMENTS AND SCHOOLING OF CHILDREN

The personal property indices were taken from the 1915 tax books at the courthouse in Urbana. These assessments were made during the

TABLE XLVIII

CORRELATION BETWEEN RENTAL VALUES AND EDUCATION OF SONS

Years of Schooling of Sons	Rental Values of Home, Dollars per Month														
	10	12.50	15	17.50	20	22.50	25	27.50	30	35	40	45	50	55	60
18.											1		1		
17.			1								1				
16.									1	5					
15.			2		1										
14.					1		1		2	1					
13.									1	1	1	1	3		1
12.		1	6	1	2				4		3	2	2		
11.		2	3		1		1		2	1	2		1		
10.			3	3	3		2	1	2	1					
9.	1	3	9		2			1	3	1	2				
8.	7	7	16	1	7	3			2	1	1		2		
7.	7	9	14	2	3		2		1						
6.	1	6	11		2		1								
5.	4	7	1												
4.	6		1												
3.			2												

$r = 0.63 \pm 0.03$

$n = 224$

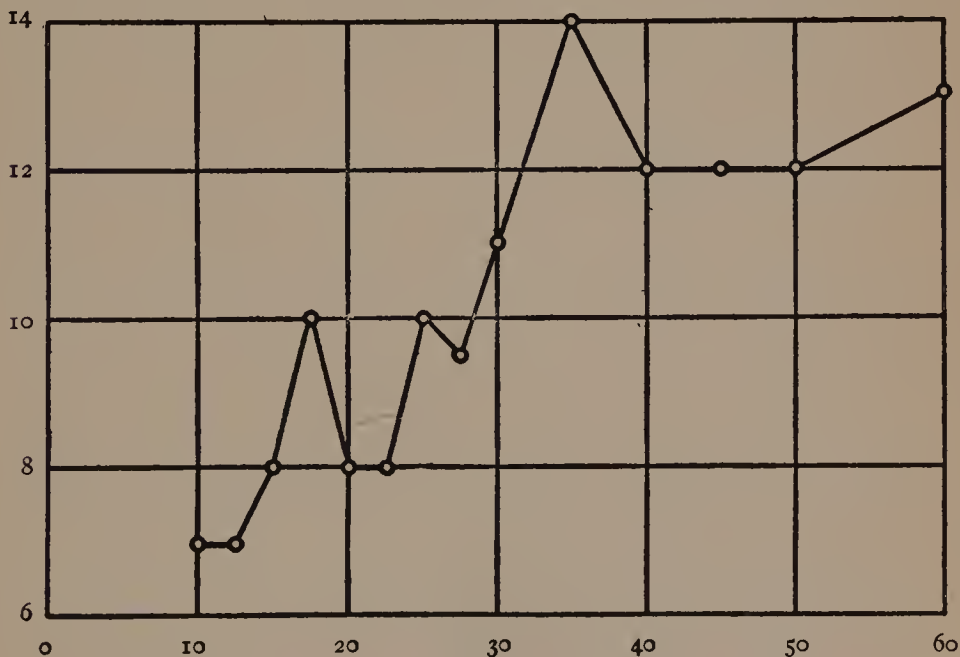


FIG. 7.—Correlation between Education of Sons and Rental Values

summer of 1914 and the figures are supposed to represent one-third of the actual valuation that the properties would have at a forced sale. A few families that were overlooked by the assessor were given the values of the 1913 assessment. A few families that have more personal property than the average were missed by the assessor both times. Owing to the almost universal practice of "tax-dodging," the values given here contain a large element of unreliability. How large this is, cannot be

TABLE XLIX

CORRELATION BETWEEN RENTAL VALUES AND EDUCATION OF DAUGHTERS

Years of Schooling of Daughters	Rental Values of Home, Dollars per Month														
	10	12.50	15	17.50	20	22.50	25	27.50	30	35	40	45	50	55	60
19.....													1		
18.....															
17.....															
16.....					3		2		1	6	2	3			2
15.....										3					
14.....									1	2					1
13.....	1	1			2		1				2		1		
12.....	1	2	10	1	6		2	1	9	1	1	4			1
11.....			2		3	1	2		2	3	1				
10.....	2	5	7	1	1	1	1		3	1					
9.....	1		3	2	1	1			4	1	1		1		
8.....	6	6	14	4	5		2		5		2				
7.....	9	6	12	2	1				1						
6.....	3	5	7	2											
5.....	3	3	3		1										
4.....															
3.....		1			1										
2.....															
1.....															
0.....		1													

$$r = 0.64 \pm 0.03$$

$$n = 226$$

determined. If it is a constant factor affecting all classes alike, it reduces the indices but does not shift them from their true order. Taking these errors into consideration, it is surprising that the correlations between the schooling of the children and the personal property assessment indices are as large as they are. They are 0.47 ± 0.04 for the sons (Table L) and 0.52 ± 0.04 for the daughters (Table LI). These figures were calculated for the group who were assessed.

TABLE L

CORRELATION BETWEEN PERSONAL PROPERTY VALUES AND EDUCATION OF SONS

Years of Schooling of Sons	Personal Property Assessment of Home, Dollars																			
	0	10	20	30	40	50	60	70	80	90	100	125	150	175	200	250	300	400	500	600
18.....								1								1				
17.....								1												
16.....								1	1				1					1		
15.....							1	1				1								
14.....						2	1	2												
13.....									1			1			1	1	2			2
12.....	4		1				3	2	1	2	1		2	1		1		1		1
11.....			2	2	1			2		2	1			1	1		1			
10.....				2	1	1	1	4		2							2			
9.....	2		1	2	1	3	4	1	1		1						2		2	
8.....	7		5	8	7	4	2	8	3								1	1		1
7.....	4		10	10	1	4	4	1			1				1					
6.....			12	4	2	1	1	1												
5.....	1		6	1	2	1	1													
4.....			2	4						1										
3.....			2																	

$r = 0.47 \pm 0.04$

$n = 198$

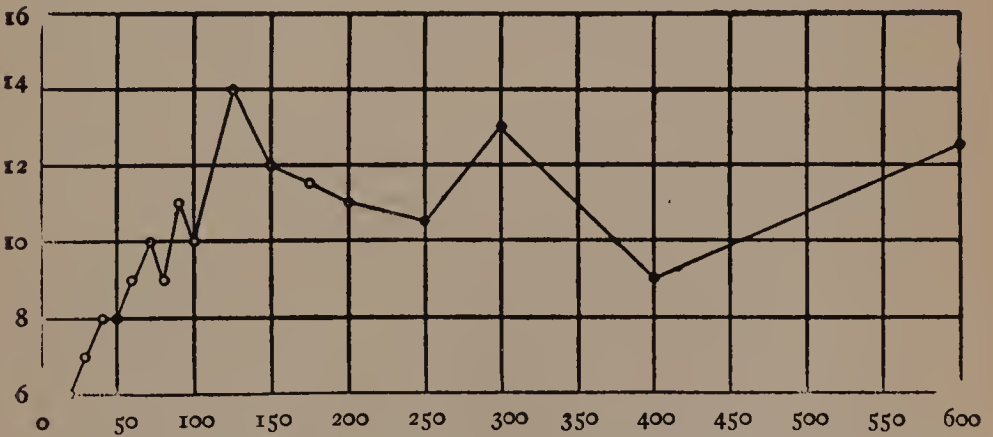


FIG. 8.—Correlation between Education of Sons and Personal Property Values

TABLE LI

CORRELATION BETWEEN PERSONAL PROPERTY VALUES AND EDUCATION OF DAUGHTERS

Years of Schooling of Daughters	Personal Property Assessment of Home, Dollars																			
	0	10	20	30	40	50	60	70	80	90	100	125	150	175	200	250	300	400	500	600
19.....																	I			
18.....																				
17.....																				
16.....	I					2	I	2	2	2			I		I		3			4
15.....													I				2			
14.....	I																2			I
13.....	2		I			2	I			I										I
12.....	2		2	2	2	2	7	4	2	6	I	3				I	5	I		I
11.....				I	I	4	2	2		5	I	I					I	I		
10.....	I		2	4	I	3	3	2	2	2		3							I	
9.....			2				3	I				I								
8.....	7		3	10	4	6	4	7	3			I					I			
7.....	5		3	11	7	4	I					I								
6.....	I		10	I	3	I	2													
5.....			7																	
4.....																				
3.....					I		I													
2.....																				
1.....																				
0.....					I															

r = 0.52 ± 0.04

n = 212

VALUES OF HOME AND SCHOOLING OF CHILDREN

The real estate assessment indices were taken from the 1915 tax books just as the personal property indices were. Owing to the unalphabetical arrangement of the books, it would have been an extremely laborious and probably unprofitable task to ascertain the total values of the real property owned by the different individuals represented in our investigation. Because of this fact it was decided to take the value of the home in which the family lived, if owned by one of its members, as the real estate index. The assessed valuation was one-third of the actual valuation. The correlation of the real estate assessment indices with the schooling of the sons is 0.63 ± 0.04 (Table LII), and with the schooling of the daughters it is 0.58 ± 0.04 (Table LIII). These figures are calculated from the group of those who owned their homes.

TABLE LII

CORRELATION BETWEEN REAL ESTATE VALUES AND SCHOOLING OF SONS

Years of Schooling of Sons	Real Estate Assessment of Home, Hundreds of Dollars																
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
18													I				I
17				I									I				
16	I						I			I					2	I	
15	2				I												
14	2									I	I	I					
13	I									I	I		I				4
12	4				2	I	I	3		I	2	I	I	I		I	2
11	2			I	I	I	I	I	I				I	3		I	
10	2			2	I	3	2	2				I					
9	6		I	2	4		I	3	2					I			
8	23		5	5	5	3			I	I	I	I		I			I
7	20			4	5	2	4	I									
6	13			5	2					I							
5	6		I	3	I	I											
4	5			3													
3	2																

$r = 0.63 \pm 0.04$

$n = 129$

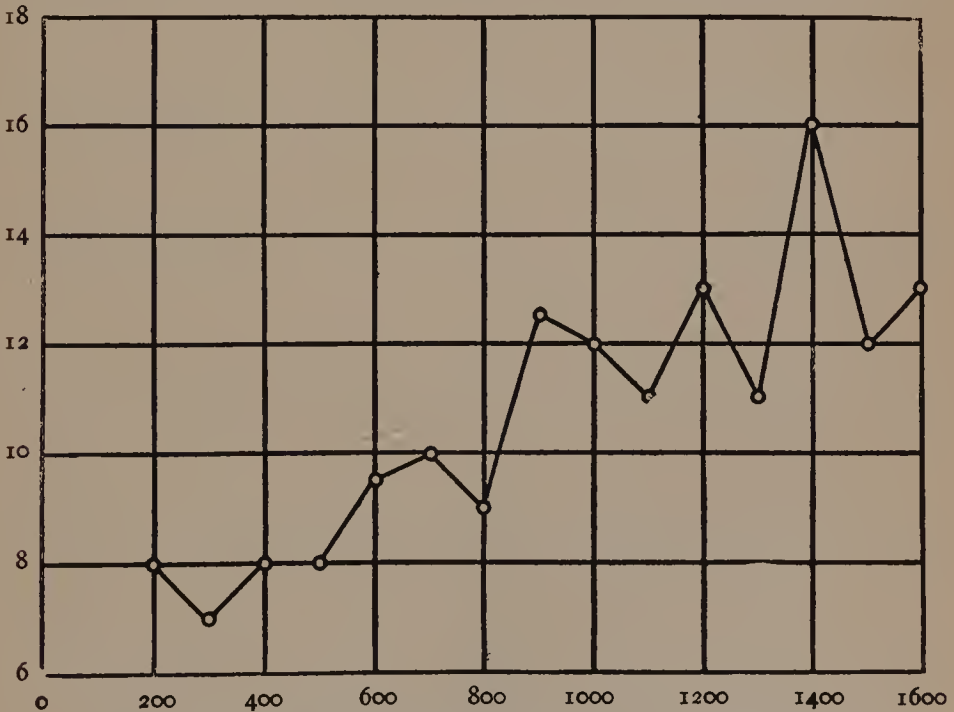


FIG. 9.—Correlation between Education of Sons and Real Estate Values

TABLE LIII

CORRELATION BETWEEN REAL ESTATE VALUES AND SCHOOLING OF DAUGHTERS

Years of Schooling of Daughters	Real Estate Assessment of Home, Hundreds of Dollars																
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
19																	1
18																	
17																	
16	4						1	1	1	4		2	1			1	4
15							1								2		
14												1				2	1
13	2			1			4								1		
12	8		1	1	5	1	2	5	4		2	2	1	1			5
11	3				4	2	2	1	1				1	1			
10	10			2	5			2	2			1					
9	8					1	1				1		1				
8	16		2	2	12	4	1	1	1	2		4		2			
7	16			3	7	2	2	1									
6	11			3	3												
5	7			2	1												
4																	
3				1	1												
2																	
1																	
0	1																

$r = 0.58 \pm 0.04$

$n = 144$

SUMMARY AND CONCLUSIONS

The relationships presented in this section may be summed up as follows:

TABLE LIV

Rental value of home correlated with schooling of sons	0.63 ± 0.03
Rental value of home correlated with schooling of daughters	0.64 ± 0.03
Personal property assessment correlated with schooling of sons . .	0.47 ± 0.04
Personal property assessment correlated with schooling of daughters	0.52 ± 0.04
Real estate assessment correlated with schooling of sons	0.63 ± 0.04
Real estate assessment correlated with schooling of daughters . . .	0.58 ± 0.04

Allowing for the approximate character of the indices, it may be said that economic home conditions in Urbana are closely correlated with the amounts of schooling which the children receive.

SECTION III. SOCIAL AND QUASI-SOCIAL RELATIONSHIPS

NUMBER OF BOOKS IN THE HOME AND SCHOOLING OF THE CHILDREN

The number of books in a home is a rough index of the culture of the home. It does not take into consideration the possibility of using the free public library, an opportunity which has been open to all Urbana homes during recent years.¹ It disregards the differences in the quality

TABLE LV

CORRELATION BETWEEN NUMBER OF BOOKS IN HOME AND EDUCATION OF SONS

Years of Schooling of Sons	Number of Books in Home											
	10	25	50	75	100	150	200	250	300	350	400	500
18.....								2				
17.....								I	I			
16.....			2		I			I				2
15.....							2		I			
14.....					I		2		I			I
13.....				I	I	2	I	2			I	
12.....		3	6	2	3	I	I	2	2	I		
11.....		2	2	I	4	I	I	I		I		
10.....			7	2	5	I						
9.....		3	11	I	I	3		I				
8.....	4	7	19	5	6	3	I	2				
7.....	8	17	8	2		2						
6.....	9	5	6	I	I		I					
5.....	4	3	3				I					
4.....	5	I	I									
3.....		2										

$r = 0.67 \pm 0.03$

$n = 222$

and character of the books, which were probably marked in some cases. Yet, in spite of these limitations, it bears a closer relationship to the number of years of schooling children receive than any other measure used in this study. For the sons the coefficient of correlation between the books in the home and the number of years of schooling is 0.67 ± 0.03 (Table LV); for the daughters it is 0.68 ± 0.02 (Table LVI).

¹ The public library in Urbana has been in a position where it could be of service to the community for more than thirty years.

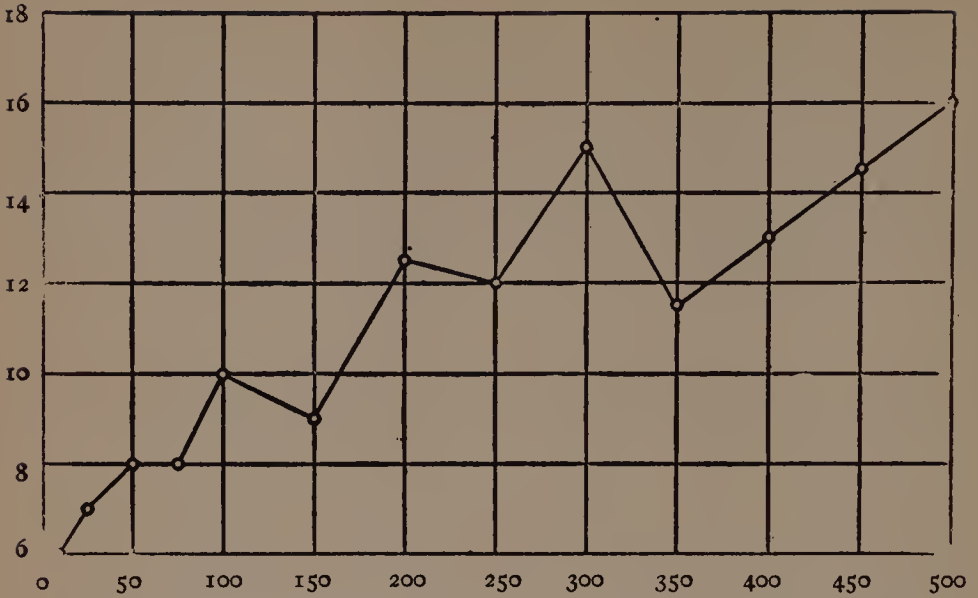


FIG. 10.—Correlation between Education of Sons and Size of Home Libraries

TABLE LVI

CORRELATION BETWEEN NUMBER OF BOOKS IN HOME AND EDUCATION OF DAUGHTERS

Years of Schooling of Daughters	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	350	400	500	600
19								1					
18													
17													
16				1	2	1	3	1	1	2	1	7	1
15			2									1	
14							1	1				2	
13					1	2	2		1		1		
12	1	4	3	3	13		9	1		3			
11			5		3	2	4	1					
10	1	4	2	4	8	2	1						
9		4	5	1	1		2						
8	2	13	16	6	5	1	1	2					
7	3	17	6	1	1	5							
6	7	6	3			1							
5	4	5			1								
4													
3		1			1								
2													
1													
0		1											

$r = 0.68 \pm 0.02$

$n = 231$

HOUSING AND SCHOOLING OF THE CHILDREN

Out of a total of 234 families 34 reported one or more grown individuals not members of the family but living in the home. Housing conditions are measured by number of rooms per individual. In finding this index no distinction was made between children and adults. In general, the housing conditions found in this investigation were quite good. Very little overcrowding existed and, in an appreciable number of cases, it seemed as though the people had more room than they could use conveniently. Housing conditions are probably a reflection of economic status. Measured merely by the number of rooms per individual the relationships which exist between housing conditions and education of sons and daughters are 0.50 ± 0.03 and 0.48 ± 0.03 , respectively (Tables LVII, LVIII). If the size of the rooms and the presence or absence of modern conveniences, such as bath and toilet, had been taken into consideration, the correlation would probably have been higher.

TABLE LVII

CORRELATION BETWEEN HOUSING CONDITIONS AND EDUCATION OF SONS

Years of Schooling of Sons	Rooms per Individual in Home					
	½	1	1½	2	3	4
18.....					2	
17.....				1	1	
16.....		1	1	2		2
15.....	1	1			1	
14.....		1	4		1	
13.....		2	1	3	3	
12.....		1	12	7	1	
11.....			3	8	2	
10.....			7	5	1	
9.....	1	4	12	4		
8.....	1	16	16	14	2	
7.....	3	9	22	2		
6.....	2	10	8	2		
5.....	4	3	4			
4.....	1	1	4	1		
3.....			2			

$r = 0.50 \pm 0.03$

$n = 223$

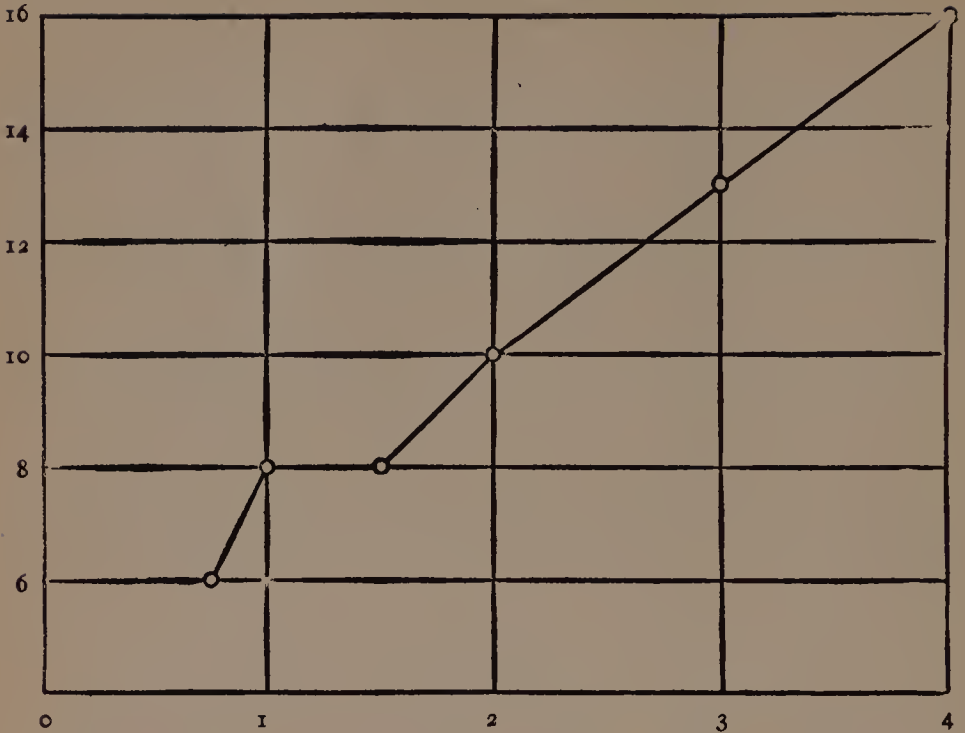


FIG. 11.—Correlation between Education of Sons and Housing Conditions

TABLE LVIII

CORRELATION BETWEEN HOUSING CONDITIONS AND EDUCATION OF DAUGHTERS

Years of Schooling of Daughters	Rooms per Individual in Home					
	½	1	1½	2	3	4
19.....					1	
18.....						
17.....						
16.....		1	4	8	6	
15.....				1		2
14.....			1	2	1	
13.....		1	3	2	2	
12.....	2	5	11	18	3	
11.....		1	7	6	1	
10.....		4	11	6	1	
9.....		4	5	2	1	
8.....	2	15	18	9	3	
7.....	3	12	12	4		
6.....	1	7	7	2		
5.....		2	6	2		
4.....						
3.....			2			
2.....						
1.....						
0.....			1			

$r = 0.48 \pm 0.03$

$n = 231$

INTERRELATIONSHIPS

Thus far in Part IV the various factors have been considered separately. In reality, they are all interrelated. A few of these interrelationships will be given to show the fallacy which results when conclusions overlook the complex character of social phenomena.

a) *Schooling of parents and number of books in the home.*—As might be forecasted, there is a close relationship between the schooling of the parents and the number of books found in the home. This correlation, 0.60 ± 0.03 for the fathers (Table LIX) and 0.61 ± 0.03 for the mothers

TABLE LIX

CORRELATION BETWEEN NUMBER OF BOOKS IN HOME AND EDUCATION OF FATHERS

Years of Schooling of Fathers	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	350	400	500	600
20			I										
19							I						
18								I					
17							I						
16									I	I	I		I
15					I				I		I	I	
14					I			2			I	2	
13					I							I	
12		4	3	I	2	I	5	3	3	I	I		
11			I	I	5	I	4		I				
10		I	4	I	7	3	7	I				I	
9	I	2	4		3		2		I				
8	4	I3	5	6	I2	4	4	3	2			I	
7	4	9	9	I	3	2	I						
6	6	8	II	2	2								
5	I	3	3			I							
4	2		I			I							
3	I		I	I		I							
2	I	2	I		I								
1													
0	I		I										

$r = 0.60 \pm 0.03$

$n = 230$

(Table LX), is not so high, however, as that previously noticed between the number of books in the home and the schooling of the children. The difference is not enough to be very significant, however.

b) *Number of books in the home and size of family.*—The relationship which exists between the number of books in the home and the number of children in that home is slightly negative, -0.10 ± 0.04 (Table LXI).

This shows that the number of books owned by a family is not at all dependent upon the number of people there are to read them.

TABLE LX

CORRELATION BETWEEN NUMBER OF BOOKS IN HOME AND EDUCATION OF MOTHERS

Years of Schooling of Mothers	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	350	400	500	600
15											1		
14		1						1	2				
13					1						1		
12			4	1	5	1	9	2	4	2	1	4	1
11			1		3		1						
10			5	1	7	2	6	3	1		1	1	
9	2	5	6	4	3	1		2	1				
8	6	13	9	5	15	6	9	2	1			1	
7	3	10	12	1	1	2							
6	1	7	4	1	1	1							
5	1	3				1							
4	5	3	4		1								
3													
2	2				1								
1													
0	1												

$r = 0.61 \pm 0.03$

$n = 230$

TABLE XLI

CORRELATION BETWEEN SIZE OF FAMILY AND NUMBER OF BOOKS IN HOME

No. of Children in Family	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	350	400	500	600
10		2	1										
9	1	1	1										
8	1	1	2	2		1							
7	4		4			2	1	1				1	
6	1	7	6	1	2	2	1			1		1	
5	3	3	3		4		2	1	1			1	
4	2	7	9	3	8		6	2	1	1		1	
3	4	10	9	3	7	3	5	1	3		1		
2	2	7	6	2	12	4	6	4	4		3	2	1
1	3	4	5	2	7	2	4	1					

$r = -0.10 \pm 0.04$

$n = 233$

c) *Rent and size of family.*—To a slight extent the better homes are occupied by the smaller families. The coefficient of correlation between size of family and rental values is also slightly negative, being -0.10 ± 0.04 (Table LXII).

TABLE LXII
CORRELATION BETWEEN SIZE OF FAMILY AND RENTAL VALUES

No. of Children	Rental Values of Home per Month, Dollars										
	10	15	20	25	30	35	40	45	50	55	60
10.....		3									
9.....		2		I							
8.....	I	2	3	I							
7.....	2	7				I	I				
6.....	2	9	4	4	I	I		2			
5.....	3	5		2	4	2			I		I
4.....	4	16	5	3	4	3	3				
3.....	4	14	11	3	5	2	3	I	3		
2.....	7	13	5	4	7	7	4	2	5		I
1.....	4	6	8	2	6		I		3		

$r = -0.10 \pm 0.04$

$n = 234$

d) *Schooling of parents and size of family.*—That educated parents have smaller families has been observed so often that it has become a matter of common knowledge. When expressed by a coefficient of correlation, this relationship is -0.20 ± 0.04 (Table LXIII). Of

TABLE LXIII
CORRELATION BETWEEN SIZE OF FAMILY AND EDUCATION OF PARENTS

No. of Children	Average Schooling of Parents															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
10.....				I		I	I									
9.....					I		I									
8.....				I				4	I	I						
7.....	I	I		I		3	2	I		2				I		
6.....					2	5	2	7	I	4		I				
5.....					I	I	I	4	3	3		2	I			
4.....					4	7	7	6	5	3	I	2	I	2		
3.....		I			7	3	8	9	5	4	2	6	I			
2.....	I			I	I	5	2	8	8	8	4	5	3	4	I	
1.....					I	2	3	7	7	5	2	2				

$r = -0.20 \pm 0.04$

$n = 227$

course, it must be kept in mind that only families that had children were included in this group. It may be that there are more families without children among the better educated. If so, a selection of homes which included such homes in addition to those studied here would reveal a larger negative correlation.

e) *Education of children and size of family.*¹—When the entire group is examined, it is seen that the children who came from large families did not go to school so long as those who came from small families. This fact is expressed by the coefficient of correlation, -0.20 ± 0.05 (Table LXIV). This is the same as the relationship which exists

TABLE LXIV
CORRELATION BETWEEN SIZE OF FAMILY AND AVERAGE EDUCATION
OF CHILDREN

No. of Children	Average Education of Children No Longer in School															
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
10.....		1	1	1	...	...	...	...	...	...	...	...	...	...	...
9.....				1	1	...	...	...	...	...	...	...	...	...	...
8.....		1	...	1	2	...	...	...	1	...	...	...	...	...	...
7.....		2	1	4	...	2	...	...	...	1	...	...	1	...	...
6.....		1	...	5	5	1	3	...	2	...	...	...	1	...	...
5.....			2	2	2	3	3	...	1	1	...	1	...	...	...
4.....	1	...	2	8	4	1	8	2	3	1	...	3	...	...	...
3.....		4	2	5	2	7	2	6	4	1	...	...	...	1	...
2.....		1	2	2	5	3	4	2	5	3	2	1	5	1	1	
1.....			1	2	4	1	1	2	2	2	1	...	1	...	...

$$r = -0.20 \pm 0.05$$

$$n = 180$$

between the schooling of the parents and the size of the family. It has already been shown² that there is a decided relationship between the schooling of the parents and the schooling of the children. The foregoing coefficient of correlation, then, may be merely another way of expressing the relationship which exists between the schooling of the parents and the size of the family.

¹ In these tables the education of the children was averaged for each family. This gives each family a single index and does not over-weight the large families.

² Pp. 43-48.

If the influence of the education of the parents could be eliminated, it might be possible to ascertain the presence or absence of a true relationship between the size of family and the schooling of the children. An attempt to do this was made as follows: The median schooling of parents is eight years for the entire group. The average schooling of the children of each family was increased or decreased by the same number of years that the average schooling of the parents varied from this median. Thus, if the parents averaged seven years and the children averaged six years, the parents would be one year below the median and the index of the children would be increased by one year. Similarly, if the parents averaged twelve years and the children fifteen years, the parents would be four years above the median and the index of the children would be decreased four years. These revised educational averages of the schooling of the children were then correlated with the number of children in each home.

This procedure eliminates the influence of the schooling of the parents. It does not counteract other factors which may act somewhat independently of the education of the parents, such as economic status or number of books in the home. Further, compulsory education influences affect the level of some of the homes of the poorly educated which have large families and tend to counterbalance any negative relationship which may exist. The results do not show any decided correlation. The slight negative relationship, -0.06 ± 0.05 (Table LXV), which was found, is virtually a zero correlation.

A FAMILY INDEX

The fact that the factors thus far considered probably acted conjointly instead of independently in determining the amounts of schooling which the children received suggested that it might be possible to weight the various items in such a way as to give each family an index and then find the relationship which existed between this index and the schooling of the children. This was done as follows: The 25 percentile deviation from the median was found for each of the three items, average education of the parents, number of books in the home, and monthly rental. These figures, which were approximately 2 years, $62\frac{1}{2}$ volumes, and \$7.50, respectively, were then divided by five to give more convenient divisions. Each of these divisors, 0.4 year, $12\frac{1}{2}$ volumes, and \$1.50, was given a value of one unit. The number of times the respective divisors were

contained in the quantities which represented the average education of the parents, the number of books in the home, and the monthly rental of a family gave the number of units credited to each of these items. The figure representing the units given a family for an item was squared and the sum of the squares for the three items gave the family index. This can be made clear best by a concrete example. A family whose parents have an average education of 8 years, which has one hundred books in the home, and pays \$15 a month rent will serve as an illustration of the

TABLE LXV

CORRELATION BETWEEN SIZE OF FAMILY AND SCHOOLING OF CHILDREN, EFFECT OF SCHOOLING OF PARENTS HAVING BEEN ELIMINATED

Average Years of Schooling of Children	Number of Children in Family									
	1	2	3	4	5	6	7	8	9	10
16.....		1								
15.....		1	1	1						
14.....	2	1	2	2		1				
13.....		1	1	2			1		1	
12.....		7	5	1		1				
11.....	6	2	5	5	2	2	2	1		
10.....	2	8	8	5	4	3	1			
9.....	1	7	6	5	1	3	4	2		1
8.....	3	1	8	1	3	4	2	2	1	2
7.....	2	5	1	6	1	4	1	1		
6.....		1	1	2	4					
5.....		1	1	2						
4.....			1							
3.....				1						

$$r = -0.06 \pm 0.05$$

$$n = 178$$

method. Dividing 8 years by the educational divisor, 0.4 year, gives 20 units, which is 400 when squared. Similarly, one hundred books when divided by the library divisor, $12\frac{1}{2}$ volumes, gives 8 units, which equals 64 when squared. The rental index, \$15, divided by the rental divisor, \$1.50, gives 10 units, which, when squared, furnishes 100 more. The sum of 400, 64, and 100, or 564, is the index of this family.

This procedure is purely arbitrary, but the writer thinks that the resulting indices are quantitatively representative of the differences in

SUMMARY AND CONCLUSIONS

The relationships presented in this chapter are shown in Table LXVIII.

TABLE LXVIII

Number of books in home correlated with schooling of sons. . .	0.67 ± 0.03
Number of books in home correlated with schooling of daughters	0.68 ± 0.02
Number of rooms per individual correlated with schooling of sons	0.50 ± 0.03
Number of rooms per individual correlated with schooling of daughters	0.48 ± 0.03
Number of books in home correlated with schooling of father . .	0.60 ± 0.03
Number of books in home correlated with schooling of mother . .	0.61 ± 0.03
Number of books in home correlated with size of family	-0.10 ± 0.04
Rental values correlated with size of family	-0.10 ± 0.04
Schooling of parents correlated with size of family	-0.20 ± 0.04
Schooling of children, uncorrected, correlated with size of family	-0.20 ± 0.04
Schooling of children, corrected, correlated with size of family . .	-0.06 ± 0.05
Schooling of sons correlated with family index	0.73 ± 0.02
Schooling of daughters correlated with family index	0.73 ± 0.02

The number of books in a home is the best single index of the probable educational level which the children may expect to reach.

The number of books in a home is closely correlated with the schooling of the parents.

The various indices used in this part of the study are more or less interrelated.

As measured by the method used here, size of family has only a slight negative correlation with the schooling of the children.

SECTION IV. OCCUPATIONAL AND OTHER GROUP RELATIONSHIPS

OCCUPATIONS OF THE FATHER

The occupations of the fathers (Table LXIX) show that this group contains representatives from almost every stratum of the economic life of the community. Most of the occupations are represented by too small a number, however, to furnish comparisons. The first thirteen occupations will be compared with respect to the schooling of the fathers, the rent of the homes, the number of books in the homes, and the schooling of the children.¹

¹ The group "Farmers" is not on a par with the others. Six of the 13 fathers are dead, having been deceased in some cases for fifteen years. All of these families are living in town. Most of these farmers have retired as far as any active farm life is concerned.

TABLE LXIX

OCCUPATIONS OF FATHERS

Occupation	No. Reported	Occupation	No. Reported
Laborer.....	24	Furnace contractor.....	1
Carpenter.....	15	Lumber dealer.....	1
Retired farmer.....	15	Pump-dealer.....	1
Farmer.....	13	Tool-polisher.....	1
Painter and paper-hanger....	8	Plumber.....	1
Real estate and insurance....	8	Roadster.....	1
Machinist.....	6	Shop foreman.....	1
Stationary engineer.....	6	Coal-dealer.....	1
Blacksmith.....	5	Railroad official.....	1
Grocer.....	5	Grocery clerk.....	1
Janitor.....	5	Postmaster.....	1
Evangelist and minister.....	5	Foreman for brick company..	1
Merchant.....	5	Clothier and dry goods	
Druggist.....	4	merchant.....	1
Railroad conductor.....	3	Manufacturer.....	1
Salesman.....	3	Optician.....	1
Physician.....	3	Undertaker.....	1
Driver of ice wagon.....	3	Road boss on Big Four.....	1
Grain-buyer.....	2	Horseshoer.....	1
Car-repairer.....	2	Jailor.....	1
Contractor.....	2	Superintendent of signals and	
Tinner.....	2	water service, Big Four....	1
Railroad engineer.....	2	Roofing business.....	1
City fireman.....	2	Carpenter superintendent....	1
Printer.....	2	Tailor.....	1
Banker.....	2	Ditcher.....	1
Policeman.....	2	Overseer of water-main laying	1
Laundryman.....	2	Implement dealer.....	1
Jeweler.....	2	Contracting excavator.....	1
Agent and solicitor.....	2	Dentist.....	1
Carpenter contractor.....	2	Sheriff.....	1
Teamster.....	2	Veterinary surgeon.....	1
Teacher.....	2	Foreman of water service on	
Cement contractor.....	2	Big Four.....	1
Roundhouse foreman.....	1	Feed-store clerk.....	1
Bank cashier.....	1	Manager of cold storage plant	1
Mine-owner.....	1	Engine inspector.....	1
Foundry-owner.....	1	Drayman.....	1
Barber.....	1	Retired minister.....	1
Ticket agent.....	1	Bookkeeper.....	1
Butcher.....	1	Night watchman.....	1
Section foreman.....	1	Railroad fireman.....	1
County superintendent of		Hostler.....	1
schools.....	1	Brickmason.....	1
Musician.....	1	Mail-carrier.....	1

TABLE LXIX—Continued

Occupation	No. Reported	Occupation	No. Reported
Mail clerk.....	I	Runs ice-cream wagon.....	I
Restaurant keeper.....	I	Itinerant photographer.....	I
House-moving contractor....	I	Justice of peace.....	I
Deliveryman.....	I	Foreman for contractor.....	I
Postal clerk.....	I	Cigar-factory foreman.....	I
Horse business.....	I	Bricksetter.....	I

a) Occupations and education of fathers.—The number of individuals (Table LXX) in several of the groups is too small to furnish any very

TABLE LXX

YEARS OF SCHOOLING	EDUCATION OF												
	Laborers	Carpenters	Retired Farmers	Farmers	Painters and Paper-Hangers	Real Estate and Insurance Men	Machinists	Stationary Engineers	Blacksmiths	Grocers	Janitors	Ministers	Merchants
16.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2	.....
15.....	.....	.....	.....	.....	.....	I	.....	.....	.....	.....	.....	2	.....
14.....	.....	.....	.....	.....	.....	I	.....	.....	.....	.....	.....	.....	.....
13.....	.....	.....	.....	.....	.....	I	.....	.....	.....	.....	.....	.....	.....
12.....	I	.....	4	I	.....	I	.....	I	.....	.....	.....	.....	I
11.....	.....	.....	I	I	I	2	I	.....	.....	.....	.....	.....	I
10.....	.....	I	3	I	.....	I	.....	.....	I	I	.....	.....	2
9.....	I	2	.....	.....	.....	I	.....	.....	.....	.....	I	.....	.....
8.....	2	5	3	3	4	.....	I	I	.....	4	I	I	I
7.....	5	4	I	2	2	.....	2	2	I	.....	3	.....	.....
6.....	8	I	I	2	.....	.....	I	2	I	.....	.....	.....	.....
5.....	3	I	.....	.....	I	.....	.....	.....	.....	.....	.....	.....	.....
4.....	2	.....	.....	I	.....	.....	.....	.....	.....	.....	.....	.....	.....
3.....	I	I	I	.....	.....	.....	I	.....	.....	.....	.....	.....	.....
2.....	I	.....	I	I	.....	.....	.....	.....	2	.....	.....	.....	.....
1.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
0.....	.....	.....	.....	I	.....	.....	.....	.....	.....	.....	.....	.....	.....
Median years of schooling.....	6	8	10	7	8	10½	7	7	6	8	7	15	10

reliable conclusions. The material, however, is very suggestive. It appears that an eighth-grade education is the minimum for the occupations of real estate and insurance men, grocers, and merchants. For

most of the others a seventh-grade education is near the minimum. Laborers are still lower, with an average education of but six years. Ministers are the best-schooled group. One of their number, however, belongs to one of the smaller denominations which cares little for an educated clergy. He is really a laborer by vocation and a preacher by avocation:

b) *Occupations and rent.*—In this comparison (Table LXXI) the retired farmers, the real estate and insurance men, the grocers, the ministers, and the merchants make the best showing. Laborers make the poorest. The median rentals of the other occupational classes fall in the \$15 and \$20 groups.

TABLE LXXI

	Monthly Rental Values (in Dollars) of Homes of											Median Rental
	10	12.50	15	17.50	20	25	30	35	40	45	50	
Laborers.....	15	5	.....	I	2	.....	I	.....	.....	.....	.....	\$10
Carpenters.....	2	2	5	.....	4	I	.....	I	.....	.....	.....	15
Retired farmers.....	.....	I	I	.....	.....	I	5	I	I	I	4	30
Farmers.....	I	2	5	.....	2	I	2	.....	.....	.....	.....	15
Painters and paper-hangers.....	I	I	I	I	2	.....	I	I	.....	.....	.....	18.75
Real estate and insurance men.....	.....	.....	.....	.....	I	.....	2	I	I	.....	3	37.50
Machinists.....	.....	I	3	I	.....	.....	I	.....	.....	.....	.....	15
Stationary engineers.....	.....	.....	I	2	I	I	I	.....	.....	.....	.....	18.75
Blacksmiths.....	.....	I	3	.....	.....	I	.....	.....	.....	.....	.....	15
Grocers.....	.....	.....	I	.....	I	.....	2	I	.....	.....	.....	30
Janitors.....	.....	I	2	.....	.....	.....	.....	I	I	.....	.....	15
Ministers.....	.....	.....	I	.....	.....	2	.....	.....	2	.....	.....	25
Merchants.....	.....	.....	.....	.....	I	.....	I	I	2	.....	.....	35

c) *Occupations and number of books in home.*—The influence of a scholastic occupation appears here (Table LXXII). The ministers have libraries which correspond to their education and occupation. On the other hand, laborers are almost without libraries, for the average number of books in a laborer's home is less than twenty-five. This means that these homes have almost no books other than the Bible, a couple of hymn-books, and the children's schoolbooks. The remainder of the occupational groups fall between these extremes in a close correlation with economic position.

d) *Occupations of fathers and schooling of their children.*—In this comparison (Tables LXXIII, LXXIV) the small number of cases in some of

TABLE LXXIV

Education of Daughters of	Years of Schooling																		Median	Median of Sons and Daughters
	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			
Laborers.....	1		4	1	6	7	1	4	2									8	7	
Carpenters.....				2	3	6		1	3	1								8	8	
Retired farmers.....			3	2		1		2	2	6			2	3			1	12	11	
Farmers.....				6	3	9				1				1				8	8	
Painters and paper-hangers.....			1		2				2	1	1							10	10	
Real estate and insurance men.....										1				4				16	15	
Machinists.....					4	5		2	1									8	8	
Stationary engineers.....						2		1		1								9	8	
Blacksmiths.....				1		3			2	2	1							11	9	
Grocers.....								2										10	10	
Janitors.....					2	1		1	1	1								9	9	
Ministers.....					1						1			2				14½	11	
Merchants.....						2					3							12	11½	

insurance men to be the best educated. Next come the children of merchants, retired farmers, ministers, grocers, and painters and paper-hangers. The most poorly educated are the children of laborers.

THE TRUANT OFFICER'S REPORT

It was thought that it might prove interesting and perhaps instructive to examine those families which have had to be visited by the truant officer. The woman who occupies this position in Urbana has been in charge of the work for twelve years. Through the performance of the duties of her office she has become acquainted with those families whose children were of legal school age but did not attend school as the statutes require. The writer took a list of the names and addresses of the families that furnished the data which have been presented in Part IV to this woman and requested her to mark all the families which she had visited in her official capacity. This she very kindly did. These families were then studied, with respect to the schooling of the parents, the number of books in the home, the rental value of the home, and the schooling of the children, and compared with the positions of the remainder of the families as to these items. It is probable that there are other families included in this study who moved to Urbana after their children were fourteen years of age or older who would have been included in the group that furnished work for the truant officer if they had always lived in Urbana.

For convenience in discussing the data the families were divided as follows: Group A, those families who have been visited in an official

way by the Urbana truant officer—30 families; Group B, those who have not received any official visits from the truant officer since they have lived in Urbana—204 families.

a) *Education of parents.*—The parents of Group A are less extensively schooled than the parents of Group B (Table LXXV). The

TABLE LXXV
EDUCATION OF FATHERS AND MOTHERS

YEARS OF SCHOOLING	GROUP A		GROUP B	
	Fathers	Mothers	Fathers	Mothers
20.....			1	
19.....			1	
18.....			1	
17.....			1	
16.....			4	
15.....			4	1
14.....		1	6	3
13.....			2	2
12.....	3	1	21	33
11.....			13	5
10.....	2	2	23	25
9.....		2	13	22
8.....	6	4	48	63
7.....	6	9	24	21
6.....	7	1	22	14
5.....	1	2	7	3
4.....	1	7	3	6
3.....	2		2	
2.....	1		4	3
1.....				
0.....	1	1	1	
Median schooling.....	7.33 years	7.44 years	8.78 years	8.85 years

Difference between medians for fathers, 1.45 ± 0.25 years

Difference between medians for mothers, 1.41 ± 0.35 years

fathers in the homes which received the official visits of the truant officer went to school 1.45 years less on the average than the fathers in those homes which did not receive an official visit from the truant officer. They received a median schooling of 7.33 years as compared with 8.78 years for the second group. The median of Group A mothers is 7.44 years; of Group B mothers it is 8.85 years.

b) *Number of books in home.*—The median library of Group A, 50 volumes, is one-half the size of the median library of Group B (Table LXXVI).

c) *Rental values of home.*—Group B families live in a much better class of homes than Group A families (Table LXXVII). The median home in Group A has a rental value of \$12.50 per month, while the median home in the other group would rent for \$20.

TABLE LXXVI

NUMBER OF BOOKS IN HOMES

No. of Volumes	Group A	Group B
0-10.....	8	13
25.....	6	37
50.....	8	38
75.....	1	12
100.....	2	38
150.....	1	14
200.....	2	23
250.....		10
300.....	1	8
350.....		2
400.....		4
500.....	1	4
600.....		1
Median.....	50	100

Difference between medians, $50 \div 10$ vols.

TABLE LXXVII

MONTHLY RENTAL VALUES OF HOMES

	Group A	Group B
\$10.....	8	18
12.50.....	9	15
15.....	8	45
17.50.....		7
20.....	2	28
22.50.....		3
25.....	1	15
27.50.....		1
30.....	1	26
35.....		16
40.....		12
45.....	1	4
50.....		12
60.....		2
Median.....	\$12.50	\$20

Difference between medians, $\$7.50 \div$
\$0.70

d) *Education of the children.*—The differences between the schooling of the children of Group A and Group B (Table LXXVIII) are somewhat greater than the parental difference in education already noted. The sons of Group A received an average of 7.35 years of schooling, while those of Group B received an average of 8.94 years. The daughters of the first group averaged 8.15 years, while those of the second group averaged 10.16 years.

e) *Causes of truancy.*—The truant officer gave a rough classification of the causes of truancy. In five homes the main cause seemed to be indifference on the part of the parents. In eleven others poverty was the thing which was most evident. The children from such homes did not have the clothes necessary to enable them to attend school, or the parents kept them out to work. With the remainder the causes were

more complex and, in some cases, outside of the home. In one case a boys' club was an important factor. In another an unsympathetic teacher, combined with rigid application of school rules and regulations, proved to be almost more than home and truant officer could counteract. In other cases the cause was the slackening of home supervision until the parents did not know what the boy or girl was doing. Truancy,

TABLE LXXVIII
EDUCATION OF SONS AND DAUGHTERS

YEARS OF SCHOOLING	GROUP A		GROUP B	
	Sons	Daughters	Sons	Daughters
19.....				1
18.....			2	
17.....			2	
16.....		1	6	18
15.....	1		2	3
14.....			5	4
13.....		1	8	7
12.....	1	3	19	36
11.....		1	13	14
10.....	1	3	12	19
9.....	2		18	12
8.....	8	10	40	38
7.....	10	8	26	24
6.....	7	4	14	13
5.....	8	4	4	6
4.....	1		6	
3.....			2	2
2.....				
1.....				
0.....				1
Median education.....	7.35 years	8.15 years	8.94 years	10.16 years

Difference between median education of sons, 1.49 ± 0.22 years

Difference between median education of daughters, 2.01 ± 0.30 years

however, did not lead to early elimination in those cases where the better homes were concerned. Almost without exception the children from the better homes—they can be told by their superior status in schooling, library, or rent—continued into the high school and, in some cases, into college.

POVERTY AND HOME CONDITIONS

An attempt was made to measure the amount of poverty and destitution present in the 234 families through the records of the United

Charities' office. A conference with the superintendent disclosed the fact that only three of these families had received organized aid during the existence of the local United Charities organization, a period of two years. These families were the families of two laborers and a carpenter. The parents were poorly educated, as were the children. They were not, however, the most poorly or the least educated of those studied. Several other families were worse off educationally and economically, but were self-supporting. The writer estimated, judging from the view obtained through the front door when gathering the data, that about 10 per cent of the homes feel the pinch of poverty at times. This condition was always accompanied by the absence of the father from the home or by poorly educated parents.

CAUSES OF ELIMINATION

After a part of the data had been gathered, it occurred to the writer that it might be of value to ask the causes of the failure of the children to secure as good an education as it seemed that they might have done. Accordingly questions were asked to secure this information. The results of such a crude method cannot be accurate, but they are suggestive. The causes of elimination are given in Table LXXIX. It is

TABLE LXXIX

Had to work	4
School too far away	1
Moved about	2
Failed in studies	2
Disliked school	2
Sickness	5
Did not want to go to school; could have gone	16
Country schools	12

recognized that some of these replies may have been given merely to please the person asking the questions. The frankness and readiness with which the replies were given, however, leads the writer to think that these replies were the usual ones that these people made to similar questions on other occasions. The major rôles which opportunity and mere whims on the part of the children played in determining the lengths of their schooling leaves but a minor part for economic pressure. Probably but few of these poorly educated children could not have gone to school for a year or two more if those in the home had felt the value of such a course and if there had been the opportunity.

EVIDENCES OF ENVIRONMENTAL MOLDING

It has been a common observation of teachers and others that the children of large families are not all alike in their characteristics. Physi- cally there is much variability. This is likewise true when intellectual traits are considered. In this group of 234 families, however, it was

TABLE LXXX*

ENVIRONMENTAL MOLDING

DISTRIBUTION OF CHILDREN BY FAMILIES AND EDUCATION

Family No.	Years of Schooling																	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1							7											
2								5										
3									4									
4								1	5									
5									4	2								
6									4		1							
7													4					1
8									4	1								
9																2	2	
10												1	6					1
11									2				2					
12								3	1									
13								2	2									
14															2			2
15								3	1									
16					3	2												
17									2			2						
18									2		4							
19											2	2						
20						1	4	2										
21					1		2	3										
22				3	1		3	1										
23				1		1		2										
24						2		3	1		1							
25										1	1	2						
26								2										2
27									2	1	1	1						
28									1	1	1	1						
29	1				2	3	3				1							
30			2		3	3	2											
31					1	1	1			1								
32								1		2		1						
33								1		1	1	1						
34							2	1			1							

* This table should be read thus: Family No. 1 had seven children, all of whom received 6 years of schooling; family No. 10 had eight children, one received 11 years of schooling, six, 12 years, and one 16 years.

observed that there was frequently a marked uniformity in the amounts of schooling which the children of a family received. In an attempt to learn how frequently these phenomena appeared, all families which contained four or more children who had completed their schooling were examined. There were thirty-four such families (Table LXXX). In more than one-half of them, all the children of a family received nearly the same amounts of schooling. In many cases where there was variability it could often be explained by a change in the environment, such as resulted from moving from one town to another. In family No. 1 the children attended a country school which offered only limited opportunities. The children of family No. 2 attended a German parochial school which offered but seven years of schooling.

It is probable that the children of these thirty-four families are as variable in native characteristics as other children. Hence the uniformity present must be explained by crediting it to the coercive effect of the home and community environment.

SUMMARY AND CONCLUSIONS

Ninety-eight different occupations were represented among the 234 families.

One-tenth of the fathers were common laborers.

Occupations of fathers and home conditions, such as schooling, size of library, and rental values of homes, were closely related.

Truancy, when due to specific home causes, was found mainly in the homes of the poorer and less educated.

Poverty and indifference on the part of the parents were the most frequent causes of truancy.

Only three of the families received organized charitable assistance during the past two years. About 10 per cent of the homes probably felt the pinch of poverty at times. All these were homes of poorly educated parents or had experienced a break in the home life due to death or domestic troubles.

It is probable that lack of an opportunity or the lack of an appreciation of the value of education by those in the home was responsible, in the main, for most early eliminations.

The home and community environment "molded" some of the large families to a marked uniformity with respect to the number of years of schooling which the children received.

PART V

THE IMPORTANCE OF ENVIRONMENTAL INFLUENCES

The data presented in this part of the report were secured through personal visits to 32 homes in which adopted children had been reared. In one of these homes the adopted child had been reared in the country; the data about this individual were rejected on further consideration as not being comparable with the others. The remaining 31 homes were represented by 39 adopted children. While the writer was gathering the information it was discovered that 7 of these children were the offspring of relatives of the foster-parents. To eliminate entirely the factor of heredity these 7 were discarded. This left 28 homes containing 32 foster-children, none of whom was related to his or her foster-parents.

The main original data, exclusive of facts regarding occupations of the parents,¹ are presented here (Table LXXXI).

Date of Birth of Children.—These adopted children were born at various periods during a relatively long stretch of time. Thirty-four years elapsed between the birth of the first and the birth of the last. It follows that educational opportunities have changed much during the different decades in which they have been educated. It is also true that the foster-parents, reared a generation ago, had a more restricted educational opportunity than those of the present generation. This wide range of time must be kept in mind when the relationship between the education of the parents and the education of the children is considered. The educational opportunities of the children have been more nearly constant than those of the parents, for the state university has been in full operation during the entire period that any of these children might have attended.

Age when adopted.—In 28 of the 29 cases in which the facts were available the children were adopted at or before the age of twelve (Table LXXXII). Nine were adopted before they were two years of age. The date of adoption, however, was not always the date when the foster-home assumed control of the child.

¹ This information was collected with the explicit understanding that it would be treated confidentially. By presenting the occupations separately it is thought that no confidences are violated.

TABLE LXXXI*

No. of CHILD	NATIVITY OF		YEARS OF SCHOOLING		NO. OF BOOKS IN HOME	FINANCIAL STATUS*	RENTAL VALUES OF HOME	ADOPTED CHILDREN			FAMILY INDEX
	Father	Mother	Father	Mother				Date of Birth	Sex	Years of Schooling	
1.....	U.S.	U.S.	8	8	250	A	\$45	1868	F	12	1,700
2.....	U.S.	U.S.	8	8	100	A-B	20	1872	F	11	633
3.....	U.S.	U.S.	10	10	200	A	40	1861	F	16	1,610
4.....	Eng.	U.S.	6	6	50	B	12	1866	F	8	305
5.....	U.S.	U.S.	10	10	200	A	40	1866	M	16	1,610
6.....	U.S.	U.S.	.....	9	250	A	35	1872	F	12	1,458
7.....	U.S.	U.S.	.....	14	100	A	50	1882	F	15	1,994
8.....	U.S.	U.S.	15	8	300	A-B	20	1884	M	12	1,266
9.....	Eng.	U.S.	9	7	100	B	25	1879	F	9	753
10.....	.....	.....	.....	8	.....	A	.....	1887	F	13	.....
11.....	U.S.	U.S.	20	12	500	A	50	1886	F	10	4,289
12.....	Ger.	U.S.	2	8	100	B	40	1800	F	9	902
13.....	.....	U.S.	.....	11	100	A-B	30	1888	F	15	1,248
14.....	U.S.	U.S.	8	9	100	B	15	1890	M	9	605
15.....	U.S.	U.S.	8	8	250	A	35	1877	M	18	1,329
16.....	U.S.	U.S.	8	9	150	B	15	1882	F	6	603
17.....	U.S.	U.S.	8	8	150	A	35	1897	M	10	1,073
18.....	U.S.	U.S.	10	11	200	A	50	1894	M	9	2,021
19.....	Ger.	U.S.	10	7	200	A-B	40	1895	F	10	2,074
20.....	U.S.	U.S.	8	10	100	B	25	1800	F	12	882
21.....	U.S.	U.S.	8	8	20	B	20	1901	F	9	573
22.....	U.S.	U.S.	8	7	10	B	10	1886	M	8	371
23.....	U.S.	U.S.	10	12	75	B	15	1880	M	8	920
24.....	U.S.	U.S.	12	14	100	A	30	1880	F	13	1,553
25.....	U.S.	U.S.	10	12	75	B	15	1808	F	6	020
26.....	U.S.	U.S.	14	14	150	A-B	30	1884	M	11	1,769
27.....	U.S.	U.S.	12	12	200	A	30	1878	F	13	1,556
28.....	Ger.	Irish	10	10	200	A	25	1890	M	11	1,137
29.....	Ger.	U.S.	8	8	250	A	35	1876	F	14	1,329
30.....	Ger.	Irish	10	10	200	A	25	1891	F	11	1,137
31.....	Ger.	U.S.	8	8	250	A	35	1891	F	16	1,329
32.....	Ger.	Ger.	7	6	250	B	16	1890	F	7	777

* The families were grouped as follows: A, well-to-do; B, average; A-B, between average and well-to-do.

In a number of cases the court records showed that the child had been living with the foster-parents for years before legal adoption was effected. It is probable that this was true in other cases, although no statement of the fact appeared in the adoption records.

TABLE LXXXII

AGE WHEN ADOPTED			
Age, Years	No.	Age, Years	No.
1.....	8	8.....	2
2.....	1	9.....	0
3.....	1	10.....	0
4.....	5	11.....	2
5.....	3	12.....	1
6.....	3	24.....	1
7.....	2		

Reasons for adoption.—These children were adopted because they were public charges or were about to become so. Enough was told by the court records to make it plain that the history of each case was the

TABLE LXXXIII

CAUSES OF DEPENDENCY*

	No. of Cases
Parents dead.....	7
Mother dead.....	7
Father dead.....	2
Father dead, mother abandoned child.....	2
Mother dead, father abandoned child.....	3
Father dead, mother remarried.....	1
Parents unable to support.....	1
Father dead, mother unable to support.....	1
Mother dead, father unable to support.....	1
Abandoned by parents.....	1
Foundling.....	2
Illegitimate.....	2

*These are condensed from the remarks found on the court records under the section devoted to this subject.

history of a tragedy (Table LXXXIII). The records were brief and meager, but they were all of the same general tone, such as tales of the death of father or mother, inefficiency on the part of father or mother,

and desertion of an unwelcome child. In other words, these children, almost without exception, were born under the most unpromising conditions, conditions which would suggest weakness of hereditary stock. There is nothing in their origins to indicate a single superior child. Not a single home left property for the support of the child. All of the parents were poor. They were adopted into homes which were childless or into the homes of relatively wealthy parents who, after their own children had grown up, still desired to have a child in the household. Three children, including those adopted, represented the largest number found in any of these homes.

Nativity of foster-parents.—Most of the parents were native born. Those who were not were German, English, or Irish.

Occupations of foster parents.—A rather wide array of occupations was represented by the foster-parents (Table LXXXIV). Only one father

TABLE LXXXIV

OCCUPATION OF FOSTER-PARENTS

Occupation	No.	Occupation	No
Retired farmer.....	3	Merchant.....	1
Minister.....	3	Painting contractor.....	1
Car-inspector.....	1	Pharmacist and grocer.....	1
Carpenter.....	1	Railroad engineer.....	1
Carpenter and contractor.....	1	Rural mail-carrier.....	1
Cigar-maker.....	1	Section foreman.....	1
Farmer and school-teacher.....	1	Shop foreman.....	1
Fruit farmer and carpenter.....	1	Shop helper.....	1
Garage-owner.....	1	Tailor.....	1
Grocer.....	1	Teacher and telegraph operator..	1
Insurance man.....	1	Traveling salesman.....	1
Laborer.....	1	University professor.....	1

was a common laborer. The remainder were distributed among the various business, industrial, and professional activities of this community.

Education of foster-parents and of children.—The relationship which exists between the education of the children and the education of the foster-parents is not very close, being only 0.32 ± 0.11 (Table LXXXV). The lack of opportunity under which some of the older parents were reared may be responsible for this in a large measure.

When the amounts of schooling which the foster-children received are examined, it is seen that they fared very well. One-half of these

children received a high-school education or better, and only 4 of them failed to go to the high school for at least a few months. In comparison with the average number of years of schooling which their foster-parents received, 22 of these children received more education, 1 the same, and 6 less. When their origins are taken into consideration it seems that a large amount of credit must be given to the new environment into which adoption transplanted them.

TABLE LXXXV

CORRELATION BETWEEN EDUCATION OF FOSTER-PARENTS* AND EDUCATION OF ADOPTED CHILDREN

Years of Schooling	Average Years of Schooling of Parents											
	5	6	7	8	9	10	11	12	13	14	15	16
18.....				I								
17.....												
16.....				I		2						I
15.....							2					
14.....				I								
13.....				I				I	I			
12.....				I	2		I					
11.....				I		2				I		
10.....									I			
9.....	I		I	2		I						
8.....		I					I					
7.....		I										
6.....				I			I					

$r = 0.32 \pm 0.11$

$n = 30$

* The education of the mother is used where the average could not be found because the education of the other parent was unknown.

Number of books in home and education of adopted children.—There is a slightly closer relationship between the education of the adopted children and the number of books in the home than the previous correlation (Table LXXXVI). The coefficient is 0.42 ± 0.10 . In one case at least this is lowered by the fact that a library had been inherited.

Rental value of home and education of adopted children.—The main reason for the adoption of these children was an economic one. They were dependent. If these homes were much alike in their social attitudes, the education of the adopted children was determined largely by the economic opportunities of the foster-homes. This seems to have been the case for the relationship between rental value of home and

education of children is higher than the preceding one. It is 0.60 ± 0.08 (Table LXXXVII).

TABLE LXXXVI

CORRELATION BETWEEN NUMBER OF BOOKS IN HOME AND EDUCATION OF ADOPTED CHILDREN

Years of Schooling	Number of Books in Home												
	10	25	50	75	100	150	200	250	300	350	400	450	500
18.....								I					
17.....													
16.....							2	I					I
15.....					2								
14.....								I					
13.....					I		I						
12.....					I		I	2					
11.....					I	I	2						
10.....								I					
9.....	I				3		I						
8.....			I	I									
7.....								I					
6.....				I	I								

$r = 0.42 \pm 0.10$

$n = 29$

TABLE LXXXVII

CORRELATION BETWEEN RENTAL VALUE OF HOME AND EDUCATION OF ADOPTED CHILDREN

Years of Schooling	Rental Value of Home per Month, Dollars							
	15	20	25	30	35	40	45	50
18.....					I			
17.....								
16.....					I	2		I
15.....				I				I
14.....					I			
13.....				2				
12.....		I	I		I		I	
11.....		I	2	I				
10.....						I		
9.....	2		I			I		I
8.....	2							
7.....		I						
6.....	2							

$r = 0.60 \pm 0.08$

$n = 29$

Family index and education of adopted children.—The family index was calculated by the same method that was used in Part IV. The resulting relationship is a combination of the three preceding ones. This device gave a coefficient of correlation of 0.54 ± 0.09 (Table LXXXVIII) between family index and education of adopted children.

TABLE LXXXVIII

CORRELATION BETWEEN FAMILY INDEX AND EDUCATION OF ADOPTED CHILDREN

Years of Schooling	Family Index in Hundreds																			
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	43	
18.....											1									
17.....																				
16.....											1			2						1
15.....										1								1		
14.....											1									
13.....													2							
12.....						1				1		1		1						
11.....				1					2						1					
10.....																			1	
9.....	1			1	1		1												1	
8.....	1						1													
7.....					1															
6.....				1			1													

$r = 0.54 \pm 0.09$

$n = 29$

Financial status of home and education of adopted children.—These families were divided into three groups according to the estimates of financial status given by those who gave the other information. The three groups were average, between average and well-to-do, and well-to-do. These groupings are only approximations, but the resulting relationship proved to be unusually high, being 0.76 ± 0.05 (Table LXXXIX).

Social viewpoint of foster-homes.—In one respect all these homes were alike. The parents had a yearning for children which was not satisfied by offspring of their own and which led them to feel a responsibility when they adopted a child. They desired to do the best they could for this child, and, since education is recognized as the clearest expression of opportunity, they gave the child, in most cases, as much as they could. In a few cases, however, the children took matters into their own hands

and terminated their schooling before their parents wished it to end. It is possible, also, that the poor native ability of the child was the cause of one early elimination. The writer is quite certain that one child—one of the seven who were not considered because they were children of

TABLE LXXXIX

CORRELATION BETWEEN FINANCIAL STATUS OF HOME AND EDUCATION OF ADOPTED CHILDREN

Years of Schooling	Rank of Financial Status		
	B	A-B	A
18.....	.....	.....	1
17.....	.....	.....	.....
16.....	.....	.....	4
15.....	.....	1	1
14.....	.....	.....	1
13.....	.....	.....	3
12.....	1	1	2
11.....	.....	2	2
10.....	.....	1	.....
9.....	4	.....	1
8.....	2	.....	.....
7.....	1	.....	.....
6.....	2	.....	.....

$$r = 0.76 \pm 0.05$$

$$n = 30$$

relatives—reached its upper educable limit with the first year of high school. But all things considered, it is probable that a common social standard made these homes strive to educate the children under their care to as great a degree as the nature of the child and their own resources permitted.

SUMMARY AND CONCLUSIONS

These adopted children were born in homes where the parents were very poor, as a class, and the children were dependent, or about to become so, at the time they were taken into the foster-homes.

Most of them were taken into the foster-homes at an early age. None was older than twelve when taken into the foster-home.

They were adopted into homes which in most cases gave them superior opportunities.

They received a superior education as a class. One-half received a high-school education or better, and 22 of the 29 received more education than the average education of their foster-parents.

The coefficients of correlation presented are summed up in Table XC.

TABLE XC

Schooling of foster-parents correlated with schooling of adopted children	0.32 ± 0.11
Number of books in home correlated with schooling of adopted children	0.42 ± 0.10
Rental value of home correlated with schooling of adopted children	0.60 ± 0.08
Family index correlated with schooling of adopted children	0.54 ± 0.09
Financial status correlated with schooling of adopted children	0.76 ± 0.05

It is probable that environment determined the amounts of schooling which 29 out of the 30 children received. It is possible that the environment, and not poor native ability, was responsible for the early elimination of the thirtieth.

The schooling of adopted children was closely correlated with the conditions, especially financial, of the homes into which they were adopted. This certainly suggests that environment exerts a pronounced, if not a determining, influence on the number of years of schooling which children receive.

Adopted children received as good an education, on the average, as the children of town-dwelling parents studied in Part III. Their foster-homes were very similar, in economic, social, and educational characteristics, to the city homes of this high-school group. In comparison with the children of Part IV—children from average Urbana homes—adopted children received over three years more schooling.

PART VI

GENERAL SUMMARY AND CONCLUSIONS

Numerous coefficients of correlation of varying degrees of reliability have been presented in the various sections of the study. These may be summarized, grouped according to the sources of the data, as shown in Table XCI.

These facts, and others which cannot be so readily summarized, when taken as a whole, point to a number of general conclusions. Other generalizations of a more specific nature are supported by facts presented here and there throughout the study. In addition, there are a number of inferences and suggestions which seem to the writer to follow logically from a consideration of the data, although it cannot be said that they are proved conclusively. The interpretations will therefore be divided into three groups, general conclusions, specific conclusions, and inferences and suggestions.

GENERAL CONCLUSIONS

1. The most important conclusion, supported by the study as a whole, is that there is a close relationship between the advantages of a home, its educational, economic, and social stations, and the number of years of schooling which its children receive. This conclusion is supported by the pioneer study made in Decatur; by the facts gathered from the high-school pupils of Centralia, Champaign, Gibson City, and Rochelle; by the information secured through the personal canvass made in Urbana; and by the results of the study of adopted children.

It might be worth while to discuss here the differences between these various parts of the study. The coefficients of correlation for the high-school group, Part III, are lower than those for the group which contains representatives of all classes, Part IV; while the group of adopted children, Part V, gives indications of a combination of the characteristics of both the other groups. This is not surprising when the groups are examined more closely. The high-school homes, Part III, contain the upper economic, educational, and social levels of the communities studied. This has resulted in the selection of those families which have favored a high-school education for their children. The less exact nature of the data furnished by the high-school pupils also tends to reduce the

PERSISTENCE IN SCHOOL AND HOME CONDITIONS

TABLE XCI

Correlations from High-School Data	Schooling of Sons	Schooling of Daughters
Schooling of parents	0.45 ± 0.03	0.42 ± 0.03
Schooling of farm parents	0.35 ± 0.03	0.47 ± 0.07
Schooling of town parents	0.30 ± 0.04	0.35 ± 0.04
Schooling of father	0.44 ± 0.03	.....
Schooling of mother . . . . .	.....	0.43 ± 0.03
Rental values	0.40 ± 0.04	0.24 ± 0.04
Number of books in homes	0.39 ± 0.04	0.18 ± 0.04

Correlations from Urbana Data	Schooling of Sons	Schooling of Daughters
Schooling of father	0.47 ± 0.03	0.56 ± 0.03
Schooling of mother	0.55 ± 0.03	0.60 ± 0.03
Schooling of parents	0.65 ± 0.03	0.62 ± 0.03
Schooling of better-educated parent	0.60 ± 0.03	.....
Schooling of more poorly educated parent	0.57 ± 0.03	.....
Rental values of home	0.63 ± 0.03	0.64 ± 0.03
Personal property assessment	0.47 ± 0.04	0.52 ± 0.04
Real estate assessment	0.63 ± 0.04	0.58 ± 0.04
Number of books in home	0.67 ± 0.03	0.68 ± 0.03
Number of rooms per individual	0.50 ± 0.03	0.48 ± 0.03

Schooling of father correlated with schooling of mother	0.65 ± 0.03
Schooling of parents correlated with progress of sons	0.37 ± 0.07
Schooling of parents correlated with progress of daughters	0.22 ± 0.06
Number of books in home correlated with schooling of father	0.60 ± 0.03
Number of books in home correlated with schooling of mother	0.61 ± 0.03

Correlations with Size of Family	
Number of books in home	-0.10 ± 0.04
Rental values	-0.10 ± 0.04
Schooling of parents	-0.20 ± 0.04
Schooling of children—	
Uncorrected	-0.20 ± 0.04
Corrected for schooling of parent	-0.06 ± 0.05
Schooling of sons correlated with family index	0.73 ± 0.02
Schooling of daughters correlated with family index	0.73 ± 0.02

Correlations with Schooling of Adopted Children	
Schooling of foster-parents	0.32 ± 0.11
Number of books in home	0.42 ± 0.10
Rental values	0.60 ± 0.08
Family index	0.54 ± 0.09
Financial status	0.76 ± 0.05

correlation coefficients for Part III. The correlations of Part IV, which contains the general sampling from Urbana, are less influenced by the variations in families, because more varied economic, educational, and social levels of the community were studied. The data are also more nearly accurate. The education of the foster-parents of the adopted children resembles in amount that of the parents of the high-school group. The especial importance of the economic factor, however, as a cause for the adoption of children is revealed in the high coefficient of correlation found in Part V between rent, or financial status, and education. This phase resembles the general selection of Part IV. As a whole there is a substantial agreement between the various classes of data. All point in the same direction.

2. Another conclusion, supported by various sections in particular and by the combined data in general, is that environmental influences more often caused a child to stop attending school than did lack of ability to do the work. This conclusion is supported especially by the study of adopted children. Some of the environmental influences were within the school, such as, perhaps, certain subject requirements, unsympathetic teachers, and arbitrary regulations. Others were outside the school and characteristic of the community or the family. These influences operated frequently in producing a dislike for school. They caused the pupil to get into that state of mind which is usually described by saying that he "has lost interest in school work." This condition is not necessarily an indication that the pupil lacks the ability to do the work he dislikes. It may mean that he is unfitted by native endowment to attain more than average success in this particular kind of work, but it does not necessarily mean that he could not do even better than the average in something else. Or, it may mean that respect for education is not among the family traditions under which he has been nurtured.

It has been suggested, by some who give large stress to the factor of heredity, that the environmental factors measured here are merely an objective expression—a resultant—of the heredity of these homes; and that an even higher correlation would be found between the general intellectual ability of the parents and the amount of schooling their children receive. It seems to the writer that the facts brought out in the part devoted to adopted children suggest the improbability of such an outcome.

However, the writer will suggest how such an investigation might be attempted. In Urbana the social facts have already been secured and

the investigation might well be continued there. One could visit the families that furnished the information for Part IV of this study. These parents could be tested. The tests, to answer the purpose in a practical way, must be simple in application, as training on the part of the subject should not be presupposed. The results of the tests, when correlated with the amounts of schooling which the children received, would show how important the factors of heredity are, or, at least, whether heredity is as important as environment in determining the amounts of schooling the children receive. That there is a positive correlation between native ability and amounts of schooling received is doubtless true, but it is probably lower than is usually supposed. Such an investigation could be conducted just as well in another town as in Urbana, but it would then be necessary to secure the social data as well as the facts of heredity. A reliable comparison could not be made if one set of facts were taken from one town and another set from a different one, for there might be differences in the social composition which would vitiate the results.

3. Another conclusion which is almost a corollary of the two preceding is that early elimination is correlated with, and largely due to, factors outside the school. The school is only an institution of society. Society has created it and uses it as needs arise. Those who unreservedly blame the public school for elimination forget that the school imparts instruction to the children alone. Their parents were educated a generation earlier and can seldom be reached by the present-day school.

4. Since the amounts of schooling which children receive are closely correlated with the advantages of the homes from which they come, it follows that our high schools are largely attended and probably dominated during the last two or three years by pupils from homes of culture and of a reasonable measure of economic advantage. The well-to-do business and land-owning classes send their children, but the children of the laborer and artisan seldom graduate. This means, then, that the majority of our high-school graduates is furnished by a minority of the population. It also suggests something of the home type of those who attend our colleges and universities.¹

¹ The large proportionate increase in high-school enrolment revealed by statistics from the reports of the United States Commissioner of Education shows that these homes have been availing themselves of the opportunity for education to a greater degree each decade. Not only have more children enrolled in the public high school, but Mr. W. S. Miller has shown that they stay longer than they did twenty-five years ago. (Mr. W. S. Miller's statistics are given in the *Illinois Teacher*, April, 1915, p. 7, and in *School and Home Education*, April, 1915, p. 282.)

5. If a person wished to forecast, from a single objective measure, the probable educational opportunities which the children of a home have, the best measure would be the number of books in the home. The highest single correlation was shown by this index. Further, it is an index which is easy to apply. It is probable, however, that a detailed analysis of the kinds of books found, the number bought each year, and the number and kind read by each member of the family would be a better criterion, though it would be more difficult to secure such facts. On the other hand, the increased patronage of public libraries, characteristic of some cities, may alter conditions somewhat.

SPECIFIC CONCLUSIONS

1. There are a number of minor points which may be made the basis for specific conclusions. The correlation between the schooling of the father and that of the mother is one of these. This fact, which seems to indicate that men and women of approximately the same educational level tend to intermarry more often than mere chance or even propinquity would suggest, might be called "educational selection." This is a very important point when it is considered that it results in the concentrated transmission from one generation to the next of certain social characteristics which vary with the types of homes represented. It means that there is a continuity, and perhaps at times an intensification through generations, of the tastes, prejudices, traditions, ideals, and standards which make up the social life of a home. Family traditions and ideals are thus continuous although the different members of a home come and go; the individuals separate and form new homes, but these are much like the old home in social characteristics, and especially in educational and cultural standards.

2. The relationship which holds true between the schooling of parents and the schooling of their children who are no longer in school is paralleled by a similar relationship for those children who are yet in school. Retardation was most frequent among those children who came from poorly educated parents. This implies that retardation is due to causes outside the school similar to those which were responsible for elimination, and over which the school has little or no control. Hence it is possible that retardation is only indirectly responsible for elimination.

3. Truancy on the part of children is correlated, as a rule, with ignorance on the part of parents. In those cases where truancy occurred in the better homes, it was not followed by early elimination. This emphasizes the importance of the rigid enforcement of compulsory attendance laws. The people who most frequently violate them are usually those who have had a limited education or none at all and hence cannot appreciate its values. Their children must be protected from this parental ignorance, and the cumulative growth of a tradition of schooling must thus be insured.

4. The conclusion that size of family alone seems to have no marked effect on the education of the children may be due to the fact that these homes (the homes studied in Part IV) are nearly all far above the poverty line. The addition of one or two children would probably not affect the standard of living much, although most of the families are small and such an addition would make a relatively great difference in each one's proportion of the home's resources. Another possible explanation is that this factor is counterbalanced by the operation of compulsory attendance laws which force the children of poorly educated parents—most of the large families were found in such homes—to go to school much longer than their parents did.

5. The table giving the relationship between size of family and education of the parents reveals the fact that the population of Urbana is not quantitatively reproducing itself.¹ Those parents who have attended only the elementary school have families which are barely large enough, on the average, to maintain the population. The better-educated families have only half enough children to do so. As a whole the population is slightly declining in numbers, except as it is increased through immigration. Further, it is being reproduced largely from the lower levels. As each level tends to reproduce its own kind socially, these facts have sociological importance. They indicate a condition which would be especially disconcerting if low social position were entirely due to inferior heredity and if there were no people of superior native ability in the untrained masses. Fortunately, there seems to be much ability in the masses which needs merely the opportunity to be trained to enable

¹ It has been shown by investigation that, in any community, all families which have children must average four each to maintain an undiminished population. In Urbana the average family contains 3.62 children; see W. E. Kellicott, *The Social Direction of Human Evolution* (New York: D. Appleton & Co., 1913), p. 114.

its possessors to take the place of our present leaders.¹ This is happening, for the masses are being elevated educationally, as is shown by the fact that children in general receive more education than their parents. This condition is especially true of the poorly educated, for with them compulsory education brings this about in a marked way. It is conceivable, however, that, as centuries elapse, this constant reproduction of society from the bottom will result in a greater tendency to mediocrity in general. If society's best are continually selected by conditions which do not allow them to reproduce their share of offspring, a time may come when the best will have nearly all disappeared. This condition is to be found in some of the backward towns of New England where emigration has removed the best and left the dregs. Spain gave her best to the New World for centuries and her present inferior position is often said to be the result of this. Such a degeneration will not necessarily result in a cessation of progress by society in general, but it will result in lessening the proportion of those of superior talent. Even if exceptional ability is the result of a happy combination of parental characteristics which may occur among the masses, the low birth-rate among the well-to-do results in a distinct loss through the gradual lapse of the family traditions, ideals, and standards.

6. The education of fathers and mothers is closely correlated with the number of books in the home. In other words, the size of the home library is a measure of the dynamic effect of education. It is probable that the same relationships can be detected in the number and kind of magazines taken, the number and character of plays and entertainments attended, and other intellectual or social avocations, diversions, and recreations.

¹ It must be remembered that the facts which support this conclusion have reference merely to the amount of schooling which children receive. They can be applied to other points only in so far as the situations are analogous. The following quotation from the writings of one of the most prominent sociological writers of recent years bears upon this point: "The proposition that the lower classes of society are the intellectual equals of the upper classes will probably shock most minds. . . . Yet I do not hesitate to maintain and defend it as an abstract proposition. But, of course, we must understand what is meant by intellectual equality. I have taken pains to show that the difference in the intelligence of the two classes is immense. What I insist upon is that this difference in intelligence is not due to any difference in intellect. It is due entirely to difference in mental equipment."—Lester F. Ward, *Applied Sociology* (Boston: Ginn & Co., 1906) p. 91.

INFERENCES AND SUGGESTIONS

There are many points which were suggested by the data and by general impressions which were of such a nature that they could not be readily reduced to statistical facts. Others can be inferred from the study, although the figures do not prove them conclusively. A few of these inferences and suggestions follow:

1. One point which is suggested by the close correlation between the education of parents and home conditions, but which does not lend itself to statistical demonstration, is that the amount of education of the parents is the most important and persistent factor influencing the schooling of the children. Within certain limits it determines the occupation of the family breadwinner and restricts the earning power in any particular occupation. In a broad way, it forecasts the reading tastes of the parents, though the number of books in a home may be dependent more upon ability to buy than upon ability to enjoy.

2. Closely related to the preceding point is a more subtle and intangible outcome which may be called appreciation of the values of an education. This term describes the attitude of mind in which a person decides whether further schooling is worth the cost of obtaining it—cost being considered to mean the postponement of the satisfaction of social and other wants as well as economic loss. This appreciation of values serves as an impelling guide to both children and parents. For the child the values must be rather immediate to induce him to stay in school, while parents, with a longer life behind them, can appreciate remoter advantages. With the better-educated parents their own experiences with an education make them see that it was worth while to undergo the restraints and discomforts necessary to secure it because it made much pleasure possible. But the mere factor of custom or tradition is probably stronger than this reasoned conclusion.

It is probable that children frequently do not appreciate the values of an education, but their parents do. The children then attend school because of parental pressure. This was clearly illustrated by some of the truancy cases.¹ On the other hand, the child may think an education is worth while even though his parents do not, but this does not seem to be usual. In this case he may continue his education even in the face of discouragements. When both parents and child do not appreciate

¹ The three boys who played truant but came from the better homes were all in school or college when the data were gathered.

the values of an education, school attendance will probably be continued only so long as society's appreciation, as expressed in compulsory attendance laws, is operative. Similarly, neighborhood and community appreciation of the values of school attendance may coerce the family and shorten or lengthen the schooling of children. This is especially true when this appreciation reaches the stage where it becomes the "fashion" to do a thing.

These "values" may be purely economic. Education may stand for nothing more than increased earning power. It is probable that children who have given little thought to the future are less influenced by a possible economic advantage than are their parents. A dollar looks powerful to the child who never has had the privilege of spending any, and the allurements of the poorly paid "blind-alley" job are strong. Often the child does not realize that his future earning power would be greatly increased by a few more years in school. Parents themselves do not always realize it. Further, there are individual cases where more than a limited amount of schooling is almost a waste of time because of the lack of ability of those receiving it. Since the average parent reasons from the exception more often than from the rule, these exceptions stand out and have resulted in the popular notion, prevalent on certain social levels, that it does not "pay" to go to school. The better-educated parents are more likely to see the economic value of a good education and to compel the child to attend school.

In other cases attendance at school is favored because of the social prestige which is often the lot of those who attend high school and college. This "value" is probably more often the guiding motive with girls than with boys. It is especially in evidence in the choice of certain girls' schools by parents. This is a remoter end which probably influences the parents more than the children. A similar factor is at work with the children where the school life, especially in the high school, is connected with so many social pleasures—parties, athletic contests, clubs, and fraternities—so that as a result it is far more enjoyable than the life outside the school. This "value" is immediate and influences the children more than it influences the parents.

Another "value" is the purely intellectual pleasure which some pupils derive from their school work, the satisfaction of the "thirst for knowledge." There is no doubt that this is a very strong motive with certain pupils natively endowed with minds well fitted for intellectual work.

These various "values," economic, social, and intellectual, are not independent in their operation. They are nearly always combined, though one may predominate with one individual and a different one with another. They are, however, largely beyond the control of the public school as it has been operated in the past, and will probably remain so in the future. When values are not recognized by the children, their schooling will stop unless pressure from others—parents, friends, or community—prevents.

The foregoing discussion may be summarized by saying that parents seldom feel the need, and frequently do not recognize the advantage, of much more schooling than they themselves received. When the children have reached a realm of knowledge of which the parents are ignorant, they (the parents) often remark in substance: "Johnny has a better education than we ever received. We have made a good living. He ought to be able to do the same. Let him go to work now." This is especially true of homes where the parents have had little schooling and where "a good living" means little more than the bare necessities of life. This attitude is frequent where the parents are poor and can be assisted somewhat if the children contribute a few dollars to the family income.

3. Growing out of this appreciation of values when handed down through several generations is what may be called a *family tradition of schooling*. Appreciation reaches a stage where it is no longer rational but is a "prejudice." In such a home a child is almost as certain to attend school, if he keeps his health, as day is certain to follow night. The tradition often centers around some particular school or even a particular curriculum. Every child must follow the same path. Older brothers and sisters help the movement along and send the younger ones. On the other hand, it is probable that there are families in which the opposite is true. To them education is the mark of a despised upper class and they and theirs will have none of it.¹

4. The fact that the economic station of a home is somewhat closely correlated with the schooling of the children might lead one to think that

¹ The tradition of schooling may be cumulative in its effect. The children of one generation may be kept in school by compulsory attendance legislation. When they rear families, however, they may desire their children to have a better education than they themselves received. This will lead to a gradual cumulative increase of family traditions of schooling. Compulsory attendance laws have been adequately enforced for such a brief period of time in most communities that we must wait for the growth of the next generation before accurate information can be obtained on this point.

low economic status was primarily responsible for much early elimination. The close interrelations of the various factors, as well as other data presented, show that this is probably not true. Indirectly, however, it is probable that lack of economic resources plays an important rôle, especially in bringing about elimination from the high school, where social stratification begins to manifest itself. A sensitive adolescent, from a home which could not furnish him with a clean linen collar every day, the newest cut in coat and trousers, and other marks of a well-to-do class, might prefer to leave school and go to work, in spite of all the wishes of his parents to the contrary, rather than face the jibes and slights of his schoolmates. Similarly, in poor homes, if the child is large enough to earn a little money, this is sufficient reason for him to leave school and contribute to the family income, although it might not be a great hardship for the parents to keep him in school a year or two longer. The fact that the girls averaged a year more schooling than the boys may be a reflection of the low earning power of an adolescent girl, which is much less than that of an adolescent boy.

5. Beginning with Ayres'¹ influential study of retardation and elimination there has been a disposition on the part of investigators to place the blame for the failure and elimination of pupils upon the organization and administration of the school, and especially upon the school program of studies. Such references can be found in a number of the important surveys.² It has become the fashion to ascribe the failure of the school

¹ Leonard P. Ayres, *Laggards in Our Schools* (published by the Russell Sage Foundation, New York, 1909). Dr. Ayres says: "Our courses of study as at present constituted are fitted not to the slow or to the average child but to the unusually bright one."

² Leonard P. Ayres, *A Survey of the Public Schools of Springfield, Illinois* (published by the Russell Sage Foundation, New York City, 1914). While discussing the "significance of progress records" the report says (p. 55): "Quite unconsciously the schools of this city, like those of many other cities, have developed a course of study, a system of examinations and promotions, and methods of teaching—in short an entire school system—better fitted for the needs and requirements of the girls than for those of the boys. Those conditions can be remedied and their alteration is one of the most important tasks which confronts the schools."

In the *Report of the Survey of the Public School System of School District No. 1, Multnomah County, Oregon, City of Portland, 1913*, in the section devoted to "needed reorganizations," Superintendent J. H. Francis says (p. 192): "The marked school death-rate in the seventh and eighth grades, to which Portland forms no exception (see Fig. 8, p. 150), can be accounted for by subject-matter in the course of study, methods of presentation, and general school conditions not congenial to early adolescence."

to these agencies. But in Urbana retardation and elimination were closely correlated with home conditions, factors over which the school has almost no control. How then can the public school be entirely to blame? Many of these children are social and industrial "misfits" as well as "misfits" in the public school. Some of them, undoubtedly, are mentally subnormal. These require individual or special treatment and profit little, as far as society is concerned, from their training. Many "misfits" are handicapped by home environments, will always be retarded, and will furnish the most of those eliminated early in the competition of life. Though the public school may be responsible for a few of these "misfits," many of them are due to social and other conditions outside of it. Unless the activities of the public school can be so extended as to control and direct the home and neighborhood life—something entirely beyond its proper sphere—slow progress and early elimination on the part of some are to be expected.

6. Because of the social factors involved, the differences between cities with respect to retardation and elimination may not be a measure of the relative efficiency of their school systems at all, but may be merely an indication of corresponding differences in the composition of the population of these cities.¹ A better measure of school and system efficiency might be furnished by the comparative improvement which has been made during a definite period. But such a comparison would have to include any changes in social conditions which may have taken place during that time.

7. For similar reasons curriculum changes, such as the "six-six plan" and the introduction of vocational work, cannot be expected to be unfailing panaceas for retardation and elimination.² Vocational work, appealing strongly, as it probably will, to the economic motives of parents and children, may lessen these evils somewhat, but it has its

¹ This point was made by E. L. Thorndike in his study, "The Elimination of Pupils from School" (Department of the Interior; Bureau of Education, *Bulletin No. 4*, 1907). Thorndike says (pp. 14-15): "In the opinion of the author, however, the character of the cities' population is more important than the character of their educational administrations as a cause of the variability of elimination."

² This point has been recognized by some of those who have investigated the problems of vocational education. Thus David S. Hill says: "We cannot find in industrial training a panacea for all of our social evils." (*Facts about the Public Schools of New Orleans in Relation to Vocation*, published by the Commission Council, New Orleans, June, 1914.)

limitations. The kinds of skills which can be imparted through the vocational work of any school or the schools of any one city are necessarily limited. Schools must confine their attention to the most general types of vocational training,¹ and many of these demand a preparation in the educational fundamentals as a foundation. Retardation and elimination frequently manifest themselves before these fundamentals are attained. Hence vocational education is greatly restricted in its possible sphere. The only way to insure the more adequate training of these children is to keep them in school longer through compulsory legislation. It may be expedient to offer vocational training to some of them, but vocational training should not be introduced into the public schools with the expectation that it will "interest" all such children and thus keep them all in school longer. Social forces doom it to failure if it is introduced with such an expectation.

8. The yearly influx of vast numbers of illiterate immigrants from southeastern Europe and western Asia is a phenomenon which may well be viewed with apprehension when considered in the light of the facts presented in this study. If these people were otherwise similar to the earlier immigrants in their social behavior, the absence of a tradition of schooling would be a serious thing. The probability of imparting such a prejudice to them under the conditions among which they live and work in this country is rather remote. From this standpoint a literacy test in our immigration laws might be of untold value. Studies of various foreign-born communities in the United States, conducted as this study has been, might furnish us with some very important facts which would aid in understanding the problems of assimilation.

9. All the arguments and facts thus far advanced which suggest that retardation and elimination are largely due to forces outside the public school do not justify teachers and school officials in neglecting any steps which will lessen retardation and elimination. These people should work just as faithfully as ever to adjust the schools to the needs of the state and of the local community. They have done much in the past

¹ The impossibility of providing vocational training where specific skills must be taught is obvious when it is recalled that 40 of the 98 parental occupations represented in this study might be classed as professions and skilled or semiskilled trades. None of the 40 is followed by as many as 7 per cent of the fathers, and most of the occupations have only one or two representatives. Only those skills which are common to a number of occupations can be taught, such as, perhaps, mechanical drawing and the reading of blueprints or commercial work.

and are wide awake to possibilities. These arguments and facts, however, may be a comfort to schoolmen who have been severely criticized by investigators because of the amount of retardation and elimination present in their communities after they have done their best to remedy defects.

10. Another point worthy of mention is the possible effect of the blind action of social pressure which keeps children in school who are so poorly endowed with native ability as to be unable to profit from the instruction. This has happened in the past and is still happening in many cases with the feeble-minded. They were given the same work as other children though unable to profit by it. In a similar way children probably are forced to attend the high school and even the college when not at all fitted for the work. They leave school unable to apply the education that they have had. Their failures furnish the stock arguments of the man in the street with respect to the uselessness of an education. However, no one has clearly demonstrated the existence of any considerable number of these failures. Although they make comparatively little use of the education they have received, they may be much better off with it than without it.

11. This study is, in all probability, qualitatively representative of conditions in the small cities and towns of Illinois and perhaps throughout the Middle West. It is probable that the problem may be complicated by other factors when the foreign-born part of the population of large cities is considered. In rural districts opportunity may play a much more significant rôle than in the cities studied. But it is probable that the better-educated and well-to-do classes will strive to educate their children although they may not always use the public school to attain their ends. Quantitatively, conditions are likely to vary from place to place and the quantitative facts given here must be restricted, when quoted, to the places from which they were secured.

FINAL SUMMARY

The results of the entire study may be summed up in the following points:

GENERAL CONCLUSIONS

1. There is a high correlation between the economic, educational, and social advantages of a home and the number of years of schooling which its children receive.

2. Environmental influences more often cause a child to stop attending school than lack of ability to do the work.
3. Early elimination is correlated with, and largely due to, social and hereditary factors outside the school over which the school has little or no control.
4. High schools are largely attended by the children from homes of culture and wealth, representatives of the "better class."
5. The number of books in a home is the best single objective index of the educational advantages open to the children.

SPECIFIC CONCLUSIONS

1. Men and women marry those who are of approximately the same educational level as themselves—"educational selection."
2. Retardation is greatest, as a rule, among the children of those parents who are most poorly educated.
3. Truancy is found most frequently among the children of poor and uneducated parents.
4. Size of family has no appreciable effect on persistence in school.
5. The population of Urbana, as far as birth-rate is concerned, is slightly declining in numbers, and most of the renewal comes from the less-educated half.
6. The number of books in a home is closely correlated with the schooling of the parents.

INFERENCES AND SUGGESTIONS

1. The education of the parents, as a rule, ultimately determines the educational advantages opened to the children.
2. Appreciation of the values of an education is probably lacking in the homes where the children are eliminated early from school.
3. A family tradition of schooling is probably very effective in inducing unusual persistence in school in some cases.
4. Low economic status is probably an important indirect factor in early elimination.
5. The popular notion, which places the responsibility upon the public school for the marked elimination which is commonly found, does not allow for the operation of powerful social factors outside the school, in comparison with which the influence of the public school is almost insignificant.

6. The amounts of retardation and elimination present in a school system are not necessarily measures of the efficiency of that system, for these phenomena may be due to the operation of factors outside the public school.

7. Curriculum changes cannot be expected to counteract some of the social forces which produce elimination.

8. The influx of large numbers of immigrants who have no family traditions of schooling is a phenomenon which may presage undesirable consequences.

9. Educators who have been blamed for inefficiency because of the retardation and elimination found in their schools can find facts presented here which show that investigators of school conditions have sometimes overlooked important social factors.

10. Social pressure sometimes keeps children in school who cannot profit by the work given.

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The main causes for retardation given were late entrance, irregular attendance, lack of ability, poor physical conditions, and indifference. These include about 85 per cent of the causes of retardation. The main causes of elimination were to go to work, ill health, removal, failure in studies, and indifference.

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This study suggests that differences between the two cities studied may be due to differences in composition of population. Social causes, such as negligent parents and moving, are given as responsible for much retardation and elimination.

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This article criticizes Cornman's paper, which was presented in the first volume of the *Psychological Clinic*.

———. "Elimination of Pupils from School: A Review of Recent Investigations," *Psychological Clinic*, II (1908-9), 255-75.

This article is devoted mainly to Thorndike's elimination study.

GAY, GEORGE E. "Why Pupils Leave the High School without Graduating," *Education*, XXII (1901-2), 300-307.

GAYLOR, G. W. "A Further Study of Retardation," *School and Home Education*, XXIX (1909-10), 310-13.

"The majority of the retarded are average pupils without physical defects and of ordinary intelligence."

———. "Elimination and Vocational Training," *Psychological Clinic*, VI (1912-13), 69-73.

A theoretical discussion of the question of elimination.

———. "Elimination from a Different Angle," *Psychological Clinic*, VII (1913-14), 11-16.

This article shows how a change in the spirit of a school made for much greater persistence in school. A careful consideration of failures led to a decreased elimination.

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GREENWOOD, JAMES M. "Report on High-School Statistics," *N.E.A. Proceedings*, 1900, pp. 340-51.

Gives specific reasons which pupils gave for leaving school.

———. "Retardation of Pupils in Their Studies and How to Minimize It," *N.E.A. Proceedings*, 1909, pp. 182-86.

In addition to a theoretical discussion there is the report of the investigation of the progress of 1,957 pupils through school. Out of a total of 716 pupils who took more than the scheduled time to complete the work, at least 518 were retarded on account of conditions for which the school was not responsible. Sickness was the most potent retardation factor.

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Gives a detailed discussion of the causes of retardation.

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Those who were eliminated did poorer work, on the average, than those who remained in school. Many "bright" pupils were eliminated, however.

JOHNSON, RALPH L. "Irregular Attendance in the Primary Grades," *Psychological Clinic*, III (July 15, 1909), 89-95.

"A very important cause for retardation in the primary grades is inadequate and irregular attendance."

JOHNSTON, T. EDWARD. "Elimination in the High School," *American Schoolmaster*, VIII (March, 1915), 121-26.

The causes of the elimination of 200 high-school pupils are given. As classified, more than two-thirds are factors outside the school.

KEYES, CHARLES HENRY. *Progress through the Grades of City Schools*. New York: Teachers College, 1911.

LAW, FREDERICK H. "The Age at Which Children Leave School," *Educational Review*, XV (1898), 40-49.

A discussion of the extent and causes of withdrawals from some of the New York City schools.

LUCKEY, G. W. A. "Can We Eliminate the School Laggard?" *N.E.A. Proceedings*, 1911, pp. 1046-51.

This writer suggests a list of causes which make it very hard to control the situation.

MILLER, CHARLES A. A. J. "Progress and Retardation of a Baltimore Class," *Psychological Clinic*, XXXI (October 15, 1909), 136-40.

Dr. Miller protests against "the comparative statistics of retardation, which do not take into consideration the character of the population, the attitude of the people toward the public schools, and the enforcement of compulsory attendance laws."

MILLER, W. S. Mr. Miller's comparative statistics on high-school enrolment in Illinois are given in an editorial in *School and Home Education*, XXXIV (April, 1915), 382.

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This article gives a number of social and economic causes of retardation.

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This study reports the replies of 107 school superintendents, answers to questions on the causes of elimination from the elementary school. A long list of causes is given.

NEIGHBOURS, OWEN J. "Retardation in the Schools and Some of the Causes," *Elementary School Teacher*, XI (1910-11), 119-35.

Shows that homes which have the advantage of superior financial, educational, and moral conditions furnish the fewest retarded children.

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This study gives a few data on the home conditions of the retarded. A large percentage of the retarded have abnormal homes.

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This study considered the city by wards and related the conditions in the the school to the social conditions outside of it. The conclusions place considerable stress upon the influence of home conditions.

Report of Board of Public Schools, St. Louis. 1894-95, 1895-96, 1911.

Report of the Commissioner of Education, "Retardation and Acceleration in City Schools," II (1909), 1343.

This article suggests that population differences may be partly responsible for differences in these phenomena.

Report of the Survey of the Public School System of School District No. 1, Multnomah Co., Oregon, City of Portland, 1913.

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This writer blames the course of study for the retardation, though there are no facts which support the conclusion.

SHELDON, WINTHROP DUDLEY. "A Neglected Cause of Retardation," *Educational Review*, XL (1910), 121-31.

A theoretical discussion of the importance of large primary classes in causing retardation.

SOLDAN, F. LOUIS. "Age of Withdrawal from School," Annual Report of Superintendent of Public Schools, *Forty-first Annual Report of St. Louis Public Schools*, 1895, pp. 37-49.

This study compares elimination in St. Louis, Chicago, and Boston and attempts to give some of the causes.

SQUIRE, CARRIE A. "Our Responsibility for Retardation," *Psychological Clinic*, IV (April 15, 1910), 46-53.

"Late entrance seems to be the largest factor in causing retardation among our pupils."

STRAYER, GEORGE D. "Age and Grade Census of Schools and Colleges," Department of the Interior, Bureau of Education, 1911, *Bulletin No. 5*.

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WOODWARD, CALVIN M. "When and Why Pupils Leave School," United States Bureau of Education, *Report of the Commissioner of Education for the Year 1899-1900*, II, 1364-74.

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———. "At What Age Do Pupils Withdraw from the Public Schools?" *Report of Commissioner of Education, 1894-95*, II, 1161-70.

TRUANCY AND DELINQUENCY¹

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This study emphasizes the importance of home and community environment as causes of truancy. "More than 80 per cent of truancy is the result of indifferent or negligent parents."

HOBBS, W. W., PARSONS, E. DUDLEY, HOLBROOK, D. H., SHEPHERD, W. H. "Report of the Survey Committee of the Schoolmasters' Club of Minneapolis. An Inquiry into the Causes of Student Delinquency," *School Review*, XX (1912), 593-612.

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The writer says: "Most investigators and educators lay the heaviest share of the blame to unfavorable home conditions." She shows how the school may help in some cases by looking after the neglected sides of the child's life.

Report of Board of Education, city of Chicago, 1909.

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"Fifty per cent of population produce 75 per cent of offspring. Twenty-five per cent of population produce 50 per cent of offspring."

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¹ A few pertinent references only are given.

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THE
FIFTEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART III
THE JUNIOR HIGH SCHOOL

BY

AUBREY AUGUSTUS DOUGLASS
Clark University

Edited by GUY MONTROSE WHIPPLE, Secretary

THE PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS

1924

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SECRETARY OF THE SOCIETY**

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1st Printing 2500 copies Jan., 1917.
2nd Printing 1200 copies July, 1918.
3rd Printing 1000 copies July, 1919.
4th Printing 1200 copies July, 1920.
5th Printing 500 copies September, 1924

**Composed and Printed by
The Public School Publishing Company
Bloomington, Illinois**

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EDITOR'S PREFACE

The growth of the Society's membership, together with the increase in the sales of its publications, has made it possible this year to expend a larger sum than usual in the preparation and publication of the *Yearbook*. For the first time in the history of the Society we are issuing the *Yearbook* in three parts.

It has always been the policy of the Society to devote its publications to the discussion of topics of the hour in the field of education. The junior high school is clearly one of the most timely topics at the present moment. Mr. Douglass, the author of this part of the *Fifteenth Yearbook*, has spent many months in collecting information upon his topic. In June, 1915, he printed in the *Pedagogical Seminary* a preliminary statement of his findings. Since that time he has secured much more extended information concerning the actual development of the movement in school systems, while the list of published articles dealing with the movement has been surprisingly lengthened. (Note the author's bibliography of 173 titles.) The present part of the *Fifteenth Yearbook*, accordingly, represents probably as comprehensive and as authoritative a statement of the junior-high-school movement as has thus far appeared in our literature. Those of our members who desire to familiarize themselves with the general problems involved in the movement will find the discussion in the main body of the text most useful, while those who are already directly concerned in the organization and supervision of junior high schools will find especially valuable the summary of the present status of the movement which is set forth in the Appendix.

G. M. W.

INTRODUCTION

This study was begun in the fall of 1914. It attempts to treat topics of pedagogical and psychological importance in junior-high-school organization, to give a general idea of the views of prominent educators as they have been interpreted, to present typical curricula and methods of organization, to give some conception of the development and present scope of the movement, and to cite sources of information for those who desire to make an extended study of the subject.

The basis of the work consists of material in the form of school reports and other special literature, questionnaire returns, and letters received from school superintendents, state superintendents, commissioners of education and collegiate institutions, and the literature dealing particularly with the junior high school. An attempt has been made, however, to reinforce and supplement this by considerable work in related fields of education.

School officers have been especially generous in response to requests for different forms of data and for special literature. The writer has been in touch with many of them during the entire period the investigation has been under way. He takes this opportunity to thank them for their interest and assistance. He expresses his indebtedness to Professor William H. Burnham for his advice in the preparation of the manuscript, and to Professor Charles Hughes Johnston, Professor Alexander J. Inglis, and especially to Professor Guy M. Whipple for suggestions and criticisms.

CHAPTER I

FEATURES OF READJUSTMENT

HISTORICAL SURVEY OF THE JUNIOR HIGH SCHOOL¹

In the later eighties President Eliot took a position, which he has held since, that secondary education should 'dip down' to include the last two years of the elementary school. He seems to have been concerned primarily with the steadily increasing age of the average Harvard freshman, and to have looked upon this alteration in secondary education as a possible remedy for it. Other colleges were soon concerned with the same problem, and throughout the country attention came to be focused upon the educational system to determine what should be done.² This gave rise to the "Committee of Ten," in whose report it was pointed out that each one of the groups of experts that submitted reports upon the work of the high-school subjects was anxious that the work in its particular field should be begun earlier than was then customary.³

In another connection, the following extract is found in the report:

In the opinion of the committee several subjects now reserved for the high schools, such as algebra, geometry, natural science, and foreign languages, should be begun earlier than now; or as an alternative, the secondary school period should be made to begin two years earlier than at present, leaving six years instead of eight for the elementary-school period.⁴

In the deliberations of the "Committee of Fifteen" the question was raised whether the elementary course should be eight

¹Bunker, F. F. Reorganization of the public school system. U. S. *Bureau of Educ. Bull.*, No. 8, 1916. 186 pp. (Gives an extended historical account of the junior high school with an inclusive bibliography.)

²*Ibid.*, pp. 44-47.

³Eliot, C. W. (chairman). *Report of the Committee on Secondary School Studies*. Washington Gov't Ptg. Office, 1893. 249 pp. p. 14.

⁴*Ibid.*, p. 45.

years and the secondary course four years; or whether each course should be six years.⁵ An equal division of time was not recommended by the committee. From this time on, however, discussion of the question became more general. Dissatisfaction with the rigidity of the grade system and the conviction that time could be economized in education were productive of numerous plans of flexible promotions, which flourished during the decade beginning approximately with the year 1890, but which have persisted only to a limited extent. These plans did not solve the problem, for the agitation against the school system continued to gain momentum. Moreover, the personality of the originator of a plan seems to have been one necessary ingredient in its success; and the plans were pedagogically unsound in that on the one hand, they facilitated the progress of groups and not of individuals, while on the other hand they gave little attention to the program of studies as such.

During this period another plan to economize time was brought forward, which consisted in reducing the number of elementary grades. Kansas City, with its seven-grade elementary and four-year high school, is a well-known example of this latter plan, although schools may be found in many states with the same organization.⁶

Yet during the same period there were those who proposed to attack the problem from another angle, who insisted that the real solution lay in the division of the twelve years equally between elementary and secondary education. The essential difference between these two parties was that, whereas the one was desirous of destroying the rigidity of the grade system, thereby allowing more rapid progress over the same curriculum for groups of able students, the other would introduce high-school methods and subjects into the seventh and eighth grades and subjugate the existing curriculum to a process of condensation and elimination.

⁵*Report of the Committee of Fifteen on Elementary Education.* Published for the N. E. A. by the Amer. Book Co., 1895. 235 pp. p. 10.

⁶Greenwood, J. M. Shorter time in elementary school work. *Educ. Rev.*, 24: 1902, 375-390.

Solan, F. L. Shortening the years of elementary schooling. *Sch. Rev.*, 11: 1903, 4-17.

Butler, in 1898, argued for a "base-line from which to measure and lay out the educational course, in the nature of the child-mind and in the character of studies pursued rather than any merely formal and external scheme of administrative classification." Elementary education, for which he declared six years is sufficient, lasts from the age of six or seven to the period of adolescence, and gives general training in the elements of knowledge. Adolescence, which with us is normally from twelve to sixteen or from thirteen to seventeen, determines the period and nature of secondary education.⁷

An abundance of literature, dealing with all phases of elementary and high-school organization and curricula and including nearly all of the present-day arguments for or against the junior high school, appeared from 1900 to 1904. Three points of emphasis were noticeable. These have persisted, although they are at present less sharply differentiated. They were: Emphasis on the economy of time; emphasis on better mastery of subject matter; and emphasis on the reorganization of the curriculum. The first of these factors has probably been the most potent in bringing about the reorganization that is now national in its scope. In 1903 a committee was appointed in the N. E. A. to investigate the culture element and the economy of time in education. This committee did not report the next year, but in 1905 it recommended that reports be prepared which should consider whether the four years between the ages fourteen and eighteen, or the six years between the ages twelve and eighteen is the best period for secondary education.⁸ Another committee, of which President Harper was chairman, was likewise appointed in 1903 and reported in 1905 at the eighteenth educational conference of the academies and high schools in relations with the University of Chicago. Nearly the same questions were proposed for consideration as by the N. E. A. committee.⁹ About the same time the Pettie committee formulated a schematic

⁷Butler, N. M. The scope and function of secondary education. *Educ. Rev.*, 16: 1898, 15-27.

⁸*Proc. N. E. A.*, 1905, p. 279.

⁹Harper, W. R. (Chairman). Report of the Commission of Twenty-one. *Sch. Rev.*, 13: 1905, 23-25.

program for a six-year high school;¹⁰ and some time later the committee of the North Central Association was put to work.

In 1901, Dewey set forth the view that the educational system, which had developed a rather independent institutional existence, should be unified and brought into closer relation with existing social life. A readjustment was needed in the high school as the connecting link between the elementary school, which was created by a broad democratic movement, and the college, representative of a more aristocratic ideal.¹¹ Two years later he declared that the aim of the elementary school was not properly conceived, and that better results would be obtained if emphasis were transferred to the problem of mental attitude to be gained in the elementary school. According to his conception, the proper aim of elementary tuition should be to organize the instincts and impulses of children into working tools and interests. This ought to be accomplished in six years. "The elementary school would be relieved of its two chief wasting factors: on the one side, daily repetition of drill in rudiments which have been previously mastered; and upon the other, anticipations of subject matter so difficult that it can be pursued intelligently only at a later period." The high school, which begins at no definite point and ends at none, would then be able to formulate a definite task or aim of its own. The equal division of the twelve years between elementary education and secondary education would allow each to face its own particular problem.¹²

In 1903, Hanus and Snedden discussed aspects of the problem. In Hanus' opinion the function of the elementary school was to give a command of the school arts—reading, writing, and arithmetic—as well as some of the beginnings of general culture. He believed an extension of the time of secondary education would enable the public school pupil, as well as the private school pupil, to profit "by all the resources that the schools with good teaching and good equipment can offer him." He added that not all pupils in

¹⁰Quoted by P. H. Hanus. A six-year high-school program. *Educ. Rev.*, 25: 1903, 455-463.

¹¹Dewey, J. Current problems in secondary education. *Sch. Rev.*, 10: 1902, 13-28.

¹²Dewey, J. Discussion: Shortening the years of elementary schooling *Sch. Rev.*, 11: 1903, pp. 17-20.

the last two grammar grades should study languages or academic subjects, but rather that appropriate vocational training might be provided for many, and appropriate technical training at the upper end of all secondary or high schools.¹³ Snedden came out clearly for differentiated curricula beginning with the seventh grade. He argued that, although there were objections to early elections, these were necessary because there was doubt regarding the ultimate educational values of the subjects, because a large number of boys and girls stop school at an early age, and because of the possibilities of subsequent education. He urged early elections as the most satisfactory means of enlisting public sentiment and of adjusting educational work to the individual pupil, for then the "needs of the community would be met to a greater extent than is now the case, and certainly to a much greater extent than would be the case if secondary education studies should be prescribed for all pupils alike."¹⁴

Since 1900, the movement has rapidly gained headway. In 1905, Lyttle again advocated that the twelve-year course of study should be equally divided between the elementary school and the secondary school. He repeated the point stressed by Butler and Hanus that the elementary school should teach the rudiments of the common subjects, and advocated differentiation along three lines—business, mechanical arts, and professions.¹⁵ In 1907, Morrison, as chairman of the N. E. A. committee, summed up the arguments for the junior high school,¹⁶ and Hartwell found from his questionnaire study that the consensus of opinion was favorable to departmental study.¹⁷ In 1908, Lyttle for the committee on six-year courses called attention to the fact that the six-three-three

¹³Hanus, P. H. A six-year high-school program. *Sch. Rev.*, 25: 1903, 455-463.

¹⁴Snedden, D. S. The six-year high school. *Educ. Rev.*, 26: 1903, 525-529.

¹⁵Lyttle, E. W. Should the twelve-year course of study be equally divided between the elementary school and the secondary school? *Proc. N. E. A.*, 1905, 428-433.

¹⁶Morrison, G. B. Report of the Committee on an Equal Division of the Twelve Years in the Public Schools between the District and High Schools. *Proc. N. E. A.*, 1907, pp. 705-710.

¹⁷Hartwell, C. S. Liberating lower education. *Sch. Rev.*, 15: 1907, 436-458; pp. 184-196.

division was being agitated in some places, and that at least ten cities had employed the six-six division and believed it to be more economical. He outlined a provisional curriculum for the last two elementary grades, according to which approximately seventy per cent. of the work of the seventh and eighth grades was required and the other thirty per cent. was elective, which is fairly representative of the junior-high-school curriculum today.¹⁸ The next year the committee reported that the sentiment in favor of the proposed plan was growing and that twenty-two cities were organized.¹⁹ In 1912, Francis outlined the work of the Los Angeles intermediate schools;²⁰ and in 1914 Kingsley asserted that the eight-four plan was rapidly growing obsolete.²¹

DEFINITION OF THE JUNIOR HIGH SCHOOL

Most definitions of the junior high school have been written from the standpoint of what the school should accomplish, and have been colored therefore by the views of their formulators. For one who has not studied the junior high school thoroughly it is extremely difficult to define briefly and clearly so variable and complex an institution as the junior high school; explanation and description are perhaps better than definition. A glance at some definitions will illustrate the point.

A definition which has received considerable attention is that of Briggs, who defined the junior high school for the purposes of his recent study as "an organization of grades seven and eight or seven to nine to provide by various means for individual differences, especially by an earlier introduction of prevocational work and of subjects usually taught in the high school."²² For Davis, the essen-

¹⁸Lyttle, E. W. (Chairman). Report of the Committee on Six-Year Course of Study. *Proc. N. E. A.*, 1908, pp. 625-628.

¹⁹Morrison, C. P. Third report of the Committee on Six-Year Course of Study. *Proc. N. E. A.*, 1909, pp. 498-503.

²⁰Francis, J. H. A reorganization of our school system. *Proc. N. E. A.*, 1912, pp. 368-376.

²¹Kingsley, C. D. Problem confronting the Commission on Reorganization of Secondary Education. *Proc. N. E. A.*, 1914, pp. 483-488.

²²Briggs, T. H. Secondary education. *Rept. U. S. Commissioner Educ.*, 1914, Vol. 1, p. 137.

tial elements of a junior high school are a "rather complete reorganization of the subject matter to be taught, particularly within the seventh and eighth grades;" provision for differentiated curricula; provision for "some individual freedom of election of courses on the part of the pupils;" departmental teaching; and promotion by subject. Negatively, Davis asserts that the plan does not consist merely in segregating the pupils of these grades; nor in placing them with the high school; nor in departmentalization and promotion by subject; nor in having high-school teachers instruct seventh or eighth-grade classes.²³ Horn brings out practically the same negative points, adding that "if it is in reality an institution worthy of its place in our educational economy, it is an institution which is neither an elementary school nor a high school, but a provision for the needs of those children for which neither of the older institutions made suitable provision. It partakes to some extent of the nature of each, but is essentially different in character."²⁴

Stetson defines the junior high school as a "definite constructive attempt to make the school serve the community by bridging the gap between the grammar grades and the high school by offering some form of pre-vocational work to those who can never attend high school, and through its ability to give them more vital and wider interests."²⁵ For Templeton, the essential thing is to secure a homogeneous school atmosphere which will be more conducive to effective work on the part of both pupils and teachers, and for which the segregation of grades seven, eight and nine are necessary.²⁶ To Tomlinson's mind, the "primary object of the junior high school is to give the pupils an opportunity to become familiar with secondary school organization, customs and manners two years earlier."²⁷ Hollister believes that, if real adjustment

²³Davis, C. O. The subject-matter and administration of the six-three-three plan of secondary schools. *Univ. of Mich. Bull. No. 9*, 1915, pp. 8-9.

²⁴Horn, P. W. The junior high school in Houston, Texas. *El. Sch. Jour.* 26: 1916, 91-95.

²⁵Cited from *The Kentucky High School Quarterly*, July, 1915, p. 17.

²⁶From a paper read before the High School Section of the Cal. Teach. Assn., Oakland, Dec. 30, 1913.

²⁷Cited from *The Kentucky High School Quarterly*, July, 1915, p. 29.

is to be made, it must come "in the materials and processes of education with special reference to the changing conditions in the physical and mental characteristics of those to be educated. Here lies the fundamental fact to be considered first of all where any movement is undertaken for reform."²⁸

The majority of the foregoing definitions stress the principle of individual differences more than any other; but a second vital principle is also brought out: namely, the reorganization of subject matter for the junior high school from a social standpoint, and its placement upon a sound pedagogical and psychological basis for instruction. At the present stage of development, it does not seem desirable to limit the junior high school to any particular group of grades.

Some cities have claimed to possess junior high schools and have been listed as possessing them when they have had only an arrangement for rapid progress of bright pupils. Other cities with the same arrangement have not claimed to possess junior high schools, although some have been listed as possessing them, at times contrary to their wishes. The arrangement in question has consisted essentially in giving able pupils an opportunity to take up certain high-school subjects—usually languages, algebra, or general science—before completing the eight grades. Accelerating this class of pupils is one means of providing for individual differences, but this feature of itself is only one of the many connected with the junior high school, whose advantages ought to be extended to every pupil, not to a favored few. If any line of demarcation is drawn, it would seem that cities that do not have a junior-high-school *system*, or that are not working toward such a system, ought not to be classed as possessing a junior high school. In this study, a city has been classed as having the junior high school if it claimed to have it.

The term "Junior High School" is most frequently used, with "Intermediate School" next in popularity. The terms mean precisely the same. "Junior High School" is employed nearly everywhere except in the states on the western coast, where "Inter-

²⁸Hollister, H. A. *High-school and class management*. 1915, 314 pp. (p. 97).

mediate School" is preferred; although the latter term is used by a few superintendents throughout the middle west, New England, and the middle Atlantic states. "Junior School," "Grammar School," "Prevocational School," "Lower High School," "Consolidated School," etc., are also used in a few places as synonyms.

"Junior High School" seems to be a name that has arisen from the downward extension of the high school to include pupils who were younger. It denotes with fair accuracy the work included, and is decidedly popular with children. Its use is widespread probably because as a name it means more to school officials than "Intermediate School;" or that the name first gained foothold in the middle west and east. On the other hand, it is argued by some that this organization is not a high-school organization, nor does it resemble the elementary school, but rather is it intermediate between them, both as to methods and as to subject matter. State Superintendent Cary, of Wisconsin, gives as an additional reason for avoiding the term 'junior high school' that "one high school is enough in the minds of the people."²⁹

ARGUMENTS FOR THE JUNIOR HIGH SCHOOL³⁰

Current literature is replete with accusations brought against the eight-four method of grading. It is declared that our present method of grouping the grades is an historical accident, and is without pedagogical or psychological justification. Indeed, psychology demands a totally different system. The period between the ages of twelve and fifteen marks a time when the majority of children pass from the stage of childhood into that of youth, and this period of transition is accompanied by marked psychic changes.

²⁹*Report of the Committee on the Reorganization of the Public School on a Six-Six Plan.* Issued by C. P. Cary, State Supt., Madison, Wis., 1914. 11 pp. (bibl.). (p. 4.)

³⁰Hill, C. M. The junior high school. *Bull. of the Mo. State Normal*, Springfield, 1915. Vol. 10, No. 3, 48 pp. (Gives an excellent summary of the arguments for the junior high school.)

Johnston, C. H. Movement toward the reorganization of secondary education. *Educ. Ad. and Super.*, 1915. Published also in *Univ. of Ill. School of Educ. Bull. No. 13*, 1914, pp. 32-38. (Summarizes arguments for and against the junior high school.)

The Junior High School. Document No. 39, Council of Education, State of New Jersey, 31 pp. (bibl.). (Has reasons for and against the junior high school.)

Adolescence is a period of storm and stress, of changeableness, intense emotions, self-assertion, strong social attractions, and awakening to the significance of the industrial world and vocation. The adolescent begins to judge, inquire, reason, and he must have material upon which to exercise these powers. Our failure in the last two years of the elementary school has arisen out of our ignorance of the psychology of adolescence, for we have ignored its most salient points in arranging the curriculum, the teaching force, and the social activities of the school. For psychological reasons the study of foreign languages should be begun at the age of twelve, and such subjects as formal grammar and technical arithmetic should come later. There is also need of closer correlation between different subjects, such as history and geography. More important, individual differences in pupils call for at least a partial differentiation of courses to supply individual demands. But little vocational or prevocational training has been given, and the old organization has made it difficult to provide this training, which is properly begun at this age. Suitable work has not been provided for large or mature pupils, but they have been kept to their disadvantage in classes with smaller children.

Again, the old plan is positively wasteful: economically, for the time of the teachers has been taken up with small classes and equipment has not been used to its capacity; pedagogically,³¹ for the aim up to this time has been to cover ground and to acquire information rather to develop attitudes and capacities, while the result has been a monotonous drill of elements previously mastered. An examination of seventh and eighth-grade curricula shows that about forty per cent. of the work is of questionable value, and about twelve per cent. of the time is spent in the study of grammar alone. Tests show that relatively little progress is made in these grades in the common branches,³² while leading educators contend, and experimental evidence confirms the contention, that the tools

³¹Supt. Maxwell considers this phase of the question in his 1914 report, (pp. 120-123) and in his 1915 report (pp. 94-95). His first statement is criticised by C. H. Johnston in an editorial in *Educ. Ad. and Super.*, 1: 1915, 485-587.

³²Hill, C. M. The junior high school. *Bull. of the Mo. State Normal*, Springfield, 1915, Vol. 10, No. 3, 48 pp. (pp. 26-29.)

of learning may be acquired in six years and that eight are not required. Moreover, the elementary school does not prepare for the high school, as is shown by the failure of half the pupils to enter the second high-school year; and it does not train for life, for there are endless criticisms made alike by its graduates and the business men employing them. Neither does it train for citizenship, nor for the industries. In short, the elementary curriculum leads nowhere.

The plan of providing one teacher for each grade is of value for the first six grades, but should not be continued through the next two years. For the proper development of the child's mind it is necessary that he now be brought into contact with a greater number of teachers, including more men teachers. To insure flexibility, pupils must be promoted by subjects. Departmental teaching will meet these problems in the most satisfactory way, while at the same time teachers who are specialists in their lines will be provided. In general, a type of teacher suited for this particular environment will be developed.

The whole school system will be more nearly unified by grouping together children of the same mental and physical development. The elementary school, the junior high school, or intermediate school, and the senior high school form homogeneous groups; and social activities and school organization can better be fitted to these groups. Under the old plan pupils of the junior-high-school age have been particularly unfortunate in these respects, for their development demands a more liberal treatment than can be afforded in the elementary school, while their experience and development are not sufficient to allow the freedom of the high school. Such a grouping will also allow each division of the school to concentrate more effectively upon its own particular part of the entire school curriculum.

The old plan is undemocratic, for democracy means equal opportunity, and heretofore attention has been given only to those that will go on in the school. Again, the lack of vitalized curriculum on the part of the seventh and eighth grades, the change in subjects, the sudden change to the departmental teaching in the high school, and the inability on the part of the pupil to study

independently are responsible for the gap between the eighth and tenth grades which less than half of the pupils are able to cross. Finally, the plan of having eight years in the elementary and four years in the high school finds no parallel in European countries.

ARGUMENTS AGAINST THE JUNIOR HIGH SCHOOL

The arguments against the junior high school are not receiving as much attention as those in its favor: In the first place the new plan will be more expensive, while the results desired may be attained through improving the present system. It has not been proved that there is necessary for psychological reasons such a radical change in school methods at this age as has been asserted. On the contrary, such evidence as we have shows that the transition from childhood through youth to manhood is a gradual rather than a saltatory process; and a scheme assuming the opposite will therefore fail for psychological reasons. Again, the advocates of the junior high school underestimate the importance of drill. "An enforced rate of intellectual progress, which may be contrary to the fundamental law of the child's rate of maturing, is not what is wanted." More work should not be attempted, but the work attempted should be done better than at present.³³ There is also grave danger that specialization will be carried to an extreme, or, in other words, that attention will be focussed upon the acquisition of technical skill rather than upon the educative value of the particular subjects. Furthermore, a democratic government is dependent upon the ability of its citizens to think, not only upon a high plane, but also upon a common plane. The former consideration means they must have sufficient and varied knowledge and experience, or elements of thought; the latter that these elements of thought must be largely the same to allow individuals to consider together the common problems of democracy. If this be true, there is a certain amount of knowledge which ought to be common to all, and which can be best given in undifferentiated curricula.³⁴

³³Sachs, J. *The American Secondary School*. 1912, 295 pp. (p. 112).

³⁴Bagley, W. C. Principles justifying common elements in the school program. *Univ. of Ill. School of Educ. Bull. No. 13*, 1914, pp. 9-21.

The kind of teachers and principals demanded by the junior high school is not procurable. Moreover, the teachers and principals who have been employed in these grades in the elementary schools and who are not advanced to positions in the junior high schools will oppose the organization. Departmental teaching, also, has a number of serious defects. In the first place, a child of this age will find it difficult to adjust himself to so many different teachers, and he will be thrown entirely upon his own responsibility at a time when he needs the teacher's careful guidance. In the second place, teachers of one subject become narrowed; there is always a tendency on the part of some to overwork the pupils in their courses; and in general it is harder to place the responsibility of poor teaching.

Finally, small high schools with too few students to provide differentiated curricula will reorganize for the sole reason that it is being done elsewhere. In the more populous places, local conditions will largely determine the location of junior-high-school centers, and the convenience of the pupils who are to attend them must be taken into account. One or two instances have already been found where pupils attended a grade school rather than a more distant junior high school.

A more complicated organization, which the junior high school necessitates, will bring added difficulties in administration and discipline; and the possibility that the curriculum will deteriorate into a manipulation of courses as has been the case in the high school, but with more disastrous results. There may also be a tendency for the school system to divide into three distinct administrative units, with a "gap" between the sixth and seventh and between the ninth and tenth grades.

COST OF THE JUNIOR HIGH SCHOOL

Some of the advocates of the junior high school have maintained it would be less expensive than the old organization, and in support of this claim the figures of Superintendent Rundlett of Concord and the estimates of Professor Hanus, in the New York survey, have been cited again and again. At present, however, it is being frankly admitted that this organization is costing more.

Unless poorly prepared teachers are employed and a non-elective course of study given—where instruction will be for the class and not for the individual—it may well be expected this will be the case. At present it is estimated that the per capita expense will be midway between that of the elementary and of the high school.

From another standpoint, advantages have arisen. In the first place, junior-high-school pupils require less elaborate laboratories and shops, which, with a longer school day, can be utilized to their capacity. Secondly, in districts where more school buildings have been needed, schoolboards have adopted the policy of providing junior-high-school centers, transferring the seventh and eighth grades from the elementary schools and perhaps the ninth grades from the high schools, thus alleviating the crowded conditions in both instances. Sometimes, new junior high schools have been erected, in other cases old grammar-school or high-school buildings have been utilized, and new quarters provided for the elementary or the high-school pupils. The question of building accommodations has had great significance when the proposed change has been under consideration.

ECONOMY OF TIME AND THE JUNIOR HIGH SCHOOL

The fruits of the labors of the N. E. A. Committees on the Economy of Time in Education are set forth in the classical report submitted in 1913.³⁵ It has already been pointed out that, while it is difficult to single out one factor that has been most potent in bringing about the present-day reorganization of the entire educational system, the question of economy of time has been uppermost in the minds of the majority, at least until recently. The real junior-high-school movement of the present day aims to combine this element with a thorough overhauling of subject-matter, placing instruction on a firm and rational pedagogical basis.

Various committees and school officials that have worked upon the question of secondary educational organization in recent years have recommended plans essentially the same as the scheme pre-

³⁵Baker, J. H. (Chairman). *Economy of time in education*. *U. S. Bur. of Educ. Bull. No. 38*, 1913, 106 pp. (bibl.).

sented by the Committee on the Economy of Time in Education. An improvement long sought in the American educational scheme is the establishment of a more connected and a more logical system, which shall at the same time provide the best training for those who drop out of school. Although the pauses in the proposed plan are to end a more or less definite period of training that is intended to fit well for life if withdrawal from school should occur, yet articulation as a whole is made more complete and the entire educational process is more nearly a unified whole. At the same time it is recognized that the avenue to higher accomplishment must always be kept open and transfer from one curriculum to the other must involve a minimum loss of time. It is hoped the reorganization of the seventh and eighth grades will contribute to the unification of the educational system in the following ways: By introducing into these grades some of the high-school subjects and by reserving some of the more difficult work of the elementary grades for the high school; by eliminating non-essential subject matter; by vitalizing instruction; by the gradual establishment of departmental teaching and consequent promotion by subject; and by closely articulating the work of these grades with that of the elementary school from below and of the high school from above.

Comparison has been made again and again between our system of schools and the systems of foreign countries, and the conclusion drawn that the American young man enters upon professional or graduate study on the average two years later than is necessary. Moreover, there are psychological reasons advanced in connection with this point. The period of greatest plasticity ends with the twenties; fourteen or fifteen is too late an age to begin the acquisition of the first foreign language or to begin commercial subjects, and twenty-two is too late to begin closer specialization, whether it be in apprentice work or in professional study. Entrance upon a profession should not be made at so late an age as twenty-seven. Under our system the age of keen interest is passed while the student is still in college, and the indifference that is a frequent ailment of college graduates is pointed to by many as a result of a course with no definite aim.

The provisional time scheme of the Committee on the Economy of Time is as follows:³⁶

Elementary education, ages six to twelve.

Secondary education, ages twelve to eighteen.

College education, ages eighteen to twenty, or sixteen to twenty.

University education, ages twenty to twenty-four (graduate or professional school).

Superintendents and principals are already reporting a saving of time, especially in mathematics and languages and to a less extent in commercial work, general science and manual arts. Printed high-school courses of study frequently indicate how much high-school credit is accorded for a subject pursued below the ninth grade (see Table 1). Often, one-half credit is given. Thus, foreign language—which seems to lend itself more readily to the

TABLE 1

AMOUNT OF HIGH-SCHOOL CREDIT ALLOWED TO PUPILS OF THE LOS ANGELES INTERMEDIATE SCHOOLS³⁷

SUBJECT	B7	A7	B8	A8	B9	A9
Algebra.....			½	½	1	.....
Ancient History.....					1	1
Bookkeeping.....	½	½	½	½	½	½
Commercial Arithmetic.....					1	1
Cookery.....					½	½
English.....					1	1
Freehand Drawing.....			¼	¼	½	½
French.....	½	½	½	½	1	1
Geometry.....					1	1
German.....	½	½	½	½	1	1
Latin.....	½	½	½	½	1	1
Mechanical Drawing.....					⅙	⅙
Music (Glee Club or Orchestra).....					⅔	⅔
Oral English.....					⅙	⅙
Penmanship.....					¼	½
Physiography.....					1	1
Sewing.....	¼	¼	¼	¼	½	½
Spanish.....	½	½	½	½	1	1
Stenography.....	½	½	½	½	1	1
Woodwork.....	¼	¼	¼	¼	½	½

³⁶*Ibid.*, p. 10.

³⁷Superintendent's report, 1914, p. 137.

See also *Bull. of Univ. of Wis.*, No. 749, Wis. H. S. Announcement, 1915-16, p. 18.

economy-of-time feature—studied through the seventh and eighth grades is counted as equivalent to one year in the high school. The principle of flexibility enables bright pupils to advance by subjects, with the result that in numerous cases pupils are one year ahead in some subject. It is perhaps correct to say that in a well-organized school capable pupils may readily complete the six years in five.

Besides the National Education Association and North Central Association committees now at work upon this problem, numerous city and state systems have appointed committees to systematize school work for their own localities. These reports, when submitted, will put the junior-high-school curriculum upon a more solid foundation as far as economy of time is concerned. Meanwhile, until further adjustment relative to the saving of time can be made, a number of institutions of higher learning are considering an arrangement whereby a student may begin special training in courses such as law, medicine, or engineering, in his junior college year. A majority would retain the Bachelor of Arts degree at its present standard, allowing, however, almost any consistent group, either professional or "cultural," to be elected the last two years.³⁸

The years in which 159 schools were organized upon the junior-high-school basis, as given by our questionnaire returns (see Appendix, Section 3) are shown in Table 2.

TABLE 2
DATE OF ORGANIZATION OF 159 JUNIOR HIGH SCHOOLS

96	98	99	00	02	04	07	08	09	10	11	12	13	14	15	16
1	2	1	1	2	1	2	3	2	4	6	14	31	41	36	13

If the cities in this table are representative, the junior high school is a recent product, as far as actual organization is concerned. Correctly or not, the ones referred to as pioneers, from the standpoint of the present conception of the junior high school, are Columbus, Ohio (1909), Berkeley, Cal. (1910), Concord, N. H.

³⁸Baker, J. H. (Chairman). Economy of time in education. *U. S. Bur. of Educ. Bull. No. 33*, 1913. p. 73.

(1910) and Los Angeles (1911). Crawfordsville, Ind. mentions 1907; Madison, Ind., 1908, and Ogden, Utah, 1909 as the year when their readjustment began.

However, in response to the agitation begun a number of years before, a number of cities had begun to work out plans which, if not designated as junior high schools, exhibited many features of the present organization. Thus, Superintendent T. A. Mott described in 1901 the working of the system in schools at Richmond, Ind., which had been reorganized in 1896. All the seventh and eighth grades in the city were collected in one building, and the work was done on the departmental plan. In a year and a half pupils did a strong high-school year's work in Latin or German. Such subjects as algebra, it was stated, seemed well fitted for eighth-grade children. Parents elected whether pupils should take Latin or German.³⁹

Kalamazoo has had the seventh and eighth grades departmentalized for twenty-five years; Worcester and Providence have had provision for the rapid advance of capable pupils since 1898; Fresno, Cal., Muncie, Ind., and Fort Scott, Kan., have had the essentials of their present organization for a number of years.

PRESENT EXTENT OF THE MOVEMENT

The work of Commissioner Claxton is well known, as is that of the committees of the National Educational Association and the North Central Association, and certain leading universities and state departments. The Inland Empire Teachers' Association and the National Association of State Universities have been on record for some time as favoring the movement. At present, however, work is being undertaken that is still wider in scope. More state departments are preparing literature or courses of study for their schools; numerous state teachers' associations are discussing or approving the plan and are following their action by appointing

³⁹Mott, T. A. Correlation of high-school and grammar-grade work. *Proc. N. E. A.*, 1901, pp. 287-288.

Bunker, F. F. Reorganization of the public school system. *U. S. Bur. of Educ. Bull. No. 8*, 1916. (Gives a number of examples of these early organizations.)

committees to work out courses of study; survey after survey has recommended the adoption of the junior high school or of some form of it, and almost every large city has special arrangements of some kind to investigate its own schools and to study what is being done elsewhere.

As a result of all this, the junior high school is in a stage of rapid development. In this investigation returns have been received from 41 states where it is in actual operation. In three of the remaining seven states agitation is beginning, while two others have types of high schools that their school officials deem better suited to local conditions than the junior high school would be. In California and in the states lying north of the Mason and Dixon line in the middle west are found the greatest number of junior high schools and the best organized curricula. New England, New York and Pennsylvania will doubtless see much change in this direction during the next two or three years, New Jersey is somewhat in advance while the southern states show the least development.

Returns have been received from 268 cities; of these, 189 have the junior high school more or less well organized, 20 are in the process of organization, 29 expect to adopt it later, 24 are studying the plan with a view to some mode of reorganization, and in 6 it has been recommended to the board of education. Reports consulted indicate that it is in operation in 97 additional cities, bringing the total up to 365. These schools are perhaps the most representative, but this number doubtless does not give the right conception of the present extent of the movement. If a complete canvass were made of all the cities in the United States, it would probably be found that the nation is pretty well committed to the plan of reorganizing its schools on a broad "junior-high-school" basis (see Appendix, Section 5).

CHAPTER II

PHYSIOLOGICAL AND PSYCHOLOGICAL CHARACTERISTICS OF ADOLESCENCE¹

Whenever reasons are presented for the reorganization of the two upper grammar grades, we are pretty certain to find a statement to the effect that the boy or girl reaches the stage of adolescence at about the age of twelve, that certain physical and mental changes then occur, and that these changes should be recognized by a change in method of instruction. A careful examination of a large amount of literature dealing with arguments for the junior high school leads to the conclusion that in many places school officials are inclined to accept these arguments without careful consideration, and that this is especially true of the argument based on the physiology and psychology of the adolescent. Schoolmen appear to incline toward the opinion that, whereas we formerly thought that adolescence began at fourteen, we now think of it as beginning at twelve, and that we must therefore accord to the twelve-year-old the treatment formerly given to the pupil two years older.

DEFINITIONS²

The term adolescence is taken to denote the period of time beginning with puberty and ending with maturity, which is approximately from 14 to 25 in males and from 12 to 21 in females. Puberty is reached when the individual has acquired the development necessary to propagate his species, while pubescence is most frequently taken to indicate the stage of transition, or the time when the sexual organs are undergoing a noticeable change.

¹*Adolescence* (1904, 2 vols.), by G. Stanley Hall, furnishes the basis for discussion of the psychology of the adolescent in this chapter. For a shorter work, see pages 246 to 312 in *Principles of Secondary Education* (edited by P. Monroe, 1914), written by G. M. Whipple.

²These definitions are adapted from Hall, Whipple, Crampton, and Baldwin.

According to the last definition, prepubescence would mean the period up to the time when pubescence begins, and postpubescence would mean the period of time following the completion of pubescence.

Chronological age is determined by the number of years, months, and days the individual has lived, and may or may not correspond to the physiological age, which is determined by the state of physical development and maturity that has been reached, as indicated by menstruation, change of voice, eruption of the beard, etc. Anatomical age is closely connected with physiological age, but has a stricter reference to structure, such as is indicated by the time of appearance of the six-year-molars, the wisdom tooth, or the epiphyses of the bones. Psychological age has reference to the degree of mental development attained, and is much more closely connected with physiological age than with chronological age. Pedagogical age denotes the school standing. To these is sometimes added a moral or religious age, which has reference to the moral or religious outlook, especially of the youth compared with that of the child.

THE GENERAL PHENOMENA OF ADOLESCENCE

The following quotations give a general view of the way different psychologists regard the mental and physical changes of adolescence. For the most part they agree in saying that mental and physical acceleration go together, but disagree in other particulars.

Adolescence is a new birth, for the higher and more completely human traits are now born. . . . Development is less gradual and more saltatory The annual rate of growth in height, weight, and strength is increased and often doubled, and even more. Important functions previously non-existent arise. Growth of parts and organs loses its former proportions, some permanently and some for a season. Some of these are still growing in old age and others are soon arrested and atrophy. The old moduli of dimensions become obsolete and old harmonies are broken. The range of individual differences and average errors in all physical measurements and all psychic tests increases. Some linger long in the childish stage and advance late or slowly, while others push on with a sudden outburst of impulsion to early maturity Interest in adult life and in vocations develops. Youth awakens to a new world and understands neither it nor himself. The whole future of life depends on how

the new powers now given suddenly and in profusion are husbanded and directed. (G. S. Hall, *Adolescence*, vol. 1, pp. xiii-xiv.)

The change from an asexual to a sexual life may occur at any age from 6 to 20 years, usually between 12 and 15, but when it does occur the changes are profound. In the short space of six months the child becomes a man or a woman, and the process is fraught with the dangers and turmoil of a new birth. There is an outburst of physical growth, 4 to 5 inches are added to height, 30 to 40 pounds to weight, and strength may be doubled in a short space of time. New mental abilities appear, while others disappear, the type of play changes, new companions are sought, new likings, tendencies, enthusiasms, and emotions make up the whole life. Old landmarks of life fade and new ones are eagerly sought. . . . The important fact that is constantly disregarded is the fact that the pubertal change leaves the child a wholly different being—different mentally, physically, morally, and ethically from the children in the state just left behind. (C. Ward Crampton. *Int. Cong. on Hyg. and Demog.*, 1912. vol. 3, p. 228.)

It is probable that acceleration of body growth and mental growth go hand in hand, and not vice versa. (F. Boas, *Cyc. of Ed.* Vol. 3, pp 187-190.)

It is a favorite dictum of superficial psychology and pedagogy that instincts lie entirely dormant and then spring into full strength within a few weeks. At a certain stage, we are told, such and such a tendency has its 'nascent period' or ripening time * * * * The one instinct whose appearance seems most like a dramatic rushing upon life's stage—the sex instinct—is found upon careful study to be gradually maturing for years. The capacity for reasoning shows no signs by any tests as yet given of developing twice as much in any one year from five to twenty-five as in any other. In the cases where the differences between children of different ages may be taken roughly to measure the rate of inner growth of capacities, what data we have show nothing to justify the doctrine of sudden ripening in serial order * * * * Indeed every tendency that has been subjected to anything like rigid scrutiny seems to fit the word gradual rather than the word sudden in the rate of its maturing. (E. L. Thorndike, *Educational Psychology*. Vol. 1. pp. 260-3.)

However, the manifold alterations and augmentations in psychic life—the new instincts, feelings, ideals, motives, and the general ripening of intellectual grasp that make up the psychological picture of adolescence—point unmistakably to corresponding alterations in brain activity. These alterations may be in part the functional maturing of cells and tracts hitherto dormant, and in part the extension and ramification of the fiber processes of cells already mature, particularly in the 'higher' association areas of the cortex. The one development would account for the awakening of new instinctive tendencies, the other for the enriching and elaboration of mentality in general. (G. M. Whipple, in *Principles of Secondary Education*, p. 257.)

Two children fifteen years of age may vary from each other at least four years in their stages of physiological development—a fact which should be taken into consideration in all educational work, whether physical or mental. The results of the writer's previous study show that the stages of physical and mental maturity are parallel, irrespective of precocity or brightness; therefore, the obvious educational corollary is that our school systems, public and private, should take into careful consideration *the physiological age and the accompanying stages of mental maturity* of boys and girls, rather than the chronological age and brightness, as is now done. This would require that tall, healthy children of accelerated physiological development be encouraged to proceed through school as rapidly as possible within the limits of thoroughness, and that the small, light children of retarded physiological development be kept below or in the normal grade, doing supplementary work, *since these short, light pupils are immature in mental development, although in many cases precocious in degree of brightness.* (B. T. Baldwin. A measuring scale for physical growth and physiological age. Fifteenth Yearbook of this Society, 1916, p. 15.)

The problem of secondary education becomes one of determining more clearly the instincts or capacities peculiar to the adolescent, and the method of their treatment so that they may be productive of recognized values. Hall regards the sex instinct as the basis of the changes of this age, and many other traits as "long-circuitings" or "irradiations" of the sex instinct. Laying aside for the moment the question of the suddenness with which the tendencies appear, it will probably be admitted that the youth and the child differ markedly with respect to such traits as altruism, aesthetic appreciation, religious outlook, social relations, as well as the more primary sexual characteristics; and also in powers or capabilities such as are included in terms like 'reason.' Whipple points out that we do not need to assume that these instinctive responses to stimulations are wholly lacking up to the time of puberty, but that there is a biological basis for the belief that these types of feeling and behavior are intensified as the body assumes preparedness for the functions of race perpetuation.³ This takes us immediately into a consideration of growth.

³Whipple, G. M. In *Principles of Secondary Education* (by P. Monroe, 1914), p. 272.

PHYSICAL ASPECTS OF ADOLESCENCE

Measurements show the rate of absolute growth to be greatest at the time of birth, decreasing rather rapidly until about the ninth year for girls and the eleventh year for boys. With adolescence comes a marked increase in the rate of growth, reaching a maximum for boys at about the age of fourteen and for girls about two years earlier. After this the rate of growth decreases rather rapidly until the approximate age of twenty for males and seventeen for females. There is a correlation in height, weight, and lung capacity, although the parts and organs of the body do not grow at an equal rate, but develop rather independently of each other. There is an extraordinary range of individual differences during the period of years in which boys and girls as a class reach adolescence; and a corresponding difference in anthropometric measurements. Boaz draws the conclusions that during school age individual differences may be measured by a probable variability of about 2.5 years; that individual differences in measurements and structural and functional traits are the greater, the more rapid the rate of development of growth; that measurements of children of the same age represent individuals of different physical developments; and that these differences are greater, the older the children.⁴ Baldwin found that at the age of fifteen the heaviest boy in his group weighed 110 pounds more than the lightest boy; and the heaviest girl 104 pounds more than the lightest girl. At the age of 14 the tallest boy was 35 centimeters taller than the shortest boy and similar variations were found for girls.⁵

With the period of adolescent acceleration comes a great increase in the growth in bones and muscles. The change involves a lengthening, especially of long bones; a thickening, through the addition of new periosteal layers; a change in constitution and proportion, and an advance in the process of ossification. The muscles, which form 27.2 per cent of the weight of the body at the age of eight, grow proportionately more rapidly, so that at the age of sixteen they form, 44.2 per cent of the weight. Bones and muscles

⁴Boaz, F. Growth. *Cyc. of Educ.*, vol. 3, pp. 187-190.

⁵Baldwin, B. T. Physical growth and school progress. *U. S. Bur. of Educ. Bull. No. 10*, 1914, p. 16.

together form about 72 per cent of the weight of the adult, so their increase is the chief factor in growth. This general increase is most readily seen in the curves of height and weight.

This growth in the bony tissue and the increase in the relative percentage of the muscles, with other new bodily structures and probable changes in organs and functions, are accompanied by an extension of the circulatory system to meet these new demands. There is, however, another important change, in that the blood pressure is heightened. With the child the heart is relatively smaller and the arteries are relatively larger than with the adult, and hence the child's blood pressure is less. Burnham cites this to account for the fact that the child is able to endure violent physical activity for a short time only, while the adult is capable of more strenuous activity for a longer period; and it leads him to conclude that certain physical exercises such as long-distance running, should not be indulged in until the readjustment of the circulatory system is complete.⁶

At birth the relation of the heart to the arteries is as 25 to 20, at the beginning of puberty it is as 140 to 50, and in full maturity it is as 290 to 61. The capacity of the lungs increases noticeably during the period of adolescence, as is shown by chest measurements or by the spirometer. Measurements show that with girls the increase is most rapid from twelve to fourteen, and with boys from fourteen to sixteen. The rate of growth in both cases then decreases until the final capacity is reached at the approximate age of 20. There is also a period of strengthened vitality; a marked increase in strength; the voice changes; there are changes in facial expression; and an augmentation in the length and width of the skull. Boys lose a certain amount of fat and become lean looking; girls less frequently so. In boys the joints and points for muscular attachment are more prominent; in girls there is a marked development of the pelvis.

The brain grows little after the age of eight, and perhaps practically completes its growth at the age of fourteen. As has already been shown in a quotation, at this age may come a "functional

⁶Burnham, W. H. Unpublished Lectures, 1915-16.

maturing of tracts hitherto dormant," and perhaps an "extension and ramification of fiber processes already mature, particularly in the higher cortex." Burnham points out that the development of the nervous system is conditioned by that of the muscular system so that the development of the two go hand in hand.⁷ According to Hall, this is the age when attention should be given to the development of the large muscles of the legs, arms, and trunk, while finer coordinations should be left until a period when muscular and nervous adjustment is more complete. Pedagogically, this means the attempt to develop "skill of hand and eye" through fine muscular coordinations is wrong at the beginning of adolescence, for at this age attention should be given to the development of the basal muscles. Sufficient correlation should exist between industrial arts courses and physical training to insure such development.⁸

PSYCHICAL ASPECTS OF ADOLESCENCE

Another aspect of adolescence possesses great importance: namely, the adolescent is mentally different from the preadolescent. Whipple says:

Compared to the relatively self-centered life of the child, the life of the adolescent is shot through with consciousness of self as related to other persons. His outlook is hetero-centric, not ego-centric. His behavior has constantly a social reference. He considers himself in relation to others. It needs no argument to show how important these social tendencies are from every point of view.⁹

The actual manifestations of this social instinct are seen in a new tendency toward organization and association, and especially in what may be termed the outlook on the world in general. Reactions are less spontaneous, but factors in a situation are interpreted according to their wider significance. For instance, the teacher's direction is sufficient in the case of immature children for the preparation of a lesson or to determine discipline; these children do not

⁷Burnham, W. H. Manual training, hygiene of. *Cyc. of Educ.*, vol. 4, pp. 127-128.

⁸Hall, G. S., and Tanner, A. E. Adolescence. *Cyc. of Educ.*, vol. 1, pp. 29-44.

⁹Whipple, G. M. In *Principles of Secondary Education* (edited by P. Monroe, 1914), p. 273.

see the connection between what they are told to do and anything outside of the school room. On the other hand, the mature student wants to know the value of the school work and its connection with adult life and vocation; and he is disciplined more easily if he can see the justice of the rules he is asked to obey.¹⁰ This accords with Hall's theory that the preadolescent years are most adapted to methods of drill; while with the adolescent, subjects are best presented in not too detailed a manner. Dewey believes a child first experiments to see what each step brings, and it is not until later—perhaps at the age of thirteen or fourteen—that he sees the larger connections of history or science.¹¹

The view that mind and body are not independent of each other is perhaps responsible in part for the belief that important changes in mental capacities as well as physical characteristics occur during the adolescent age. Conclusions reached and correlations drawn by different writers have not been entirely in agreement, although perhaps the majority confirm this view. Certain physical characteristics, such as weight, height, strength, girth of chest, etc., permit of definite measurement. But the methods for ascertaining mental characteristics have been so varied, and the factors involved so complex, that often valid grounds have been found for objection to the results found and conclusions drawn. Moreover, agreement as to method in these investigations might not end the matter. It is frankly admitted that we know little about the development of the nervous system at this age, or the change in shape and size and chemical composition of the organs of the body. And it is likewise with the instincts. There are lists of instincts, but they differ one from another. It is generally agreed that instincts appear at different periods of life, but it is not agreed at what time they appear, whether some of them may appear suddenly or whether all of them appear gradually. At the present time mental tests have not been sufficiently developed to give us a precise and comprehensive knowledge of the mental traits of the adolescent as compared with

¹⁰*Fifteenth Annual report of superintendent: Physical training and hygiene, New York City.* p. 25.

¹¹Dewey, J. The psychology of the elementary school curriculum. *The El. Sch. Record*, No. 9, 1900, pp. 221-232.

the preadolescent. Likewise, the various pedagogical scales we now have, are primarily measures of product and not of process, and may not be expected to bring out the intrinsic mental difference between the adolescent and the preadolescent. For instance, it might be expected that an arithmetic scale could indicate difference in adding ability (as denoted by the number of given reactions possible in a given time) between two pupils of the same age but of different degrees of maturity, but it can hardly be expected that the results of this test will tell much about the way in which each pupil connects his arithmetic with outside affairs.

TIME OF ONSET OF PUBERTY

Examination of tables proves that no very exact time can be taken for the advent of puberty. Observation shows it may occur any time between the ages of 12 and 17 in boys, and 11 and 16 in girls. A number of factors are operative in hastening or delaying this phenomenon. Children of one nationality or race may enter upon the period of pubescence earlier than those of another; and climate is also thought to be a determining factor. Studies made in Russia, Germany, England, and America demonstrate the fact that children from the so-called higher social strata mature earlier than children from the poorer classes. When pubescence is delayed the period of transition is shortened and with it the period of growth; and while in the latter case the rate of growth may be more rapid, it seems that total growth is not so great. Good hygienic conditions and health are favorable to growth and development. All growth curves show girls have their period of accelerated development about two years earlier than boys, and investigators agree girls mature about two years earlier. This is most important if the view is held that psychical changes are occurring at the same time. Children who are taller and heavier—both boys and girls—seem to mature at an earlier age than those who are not.

Fewer data are at hand for the observation of this physical stage in the case of girls. Marro¹² observed the onset of puberty in 261

¹²Table cited by Whipple, in *Principles of Secondary Education* p. 248.

girls, and his table shows the advent of this function may be as early as the tenth year and as late as the twenty-first year. Baldwin¹³ records first menstruation as early as the eleventh year and as late as 16 years and 7 months.

Table 3, taken from Baldwin, indicates the appearance of pubescent changes in 1,241 girls.¹⁴

TABLE 3
RELATION OF PUBESCENCE TO AGE IN 1,241 GIRLS (BALDWIN)

Age	No. Pre-pubescent	Percentage	No. Pubescent	Percentage	No. Post-pubescent	Percentage
6 ½-10.....	149	100	..	.....	...	.....
10 ½.....	45	93.75	3	6.25	...	.....
11.....	27	100	..	.....	...	.....
11 ½.....	41	78.84	10	19.23	1	1.92
12.....	18	62.06	11	37.93	...	.....
12 ½.....	39	58.20	16	23.88	12	17.91
13.....	17	39.53	15	34.88	11	25.58
13 ½.....	10	15.15	25	37.87	31	46.96
14.....	10	15.33	25	38.46	30	46.15
14 ½.....	3	44.83	11	17.74	48	77.42
15.....	...	.....	8	14.54	47	85.45
15 ½.....	1	1.55	5	7.81	58	90.62
16.....	1	2.04	3	6.12	45	91.83
16 ½.....	...	.....	2	3.17	61	96.83
17.....	...	.....	..	.....	43	100.00
17-21 ½.....	...	.....	..	.....	193	100.00
22+.....	1 (22 yrs.)	.60	..	.....	165	99.4

Table 4, taken from Crampton, shows the per cent of immature, or prepubescent; maturing, or pubescent; and mature, or postpubescent boys out of a total of 4,800.

TABLE 4
PERCENTAGE OF BOYS AT GIVEN STAGES OF PUBESCENCE (CRAMPTON)

Age	Prepubescent	Pubescent	Postpubescent
12.5-13.0.....	69	25	6
13.0-13.5.....	55	26	18
13.5-14.0.....	41	28	31
14.0-14.5.....	26	28	46
14.5-15.0.....	16	24	60
15.0-15.5.....	9	20	70
15.5-16.0.....	5	10	85
16.0-16.5.....	2	4	93
16.5-17.0.....	1	4	95
17.0-17.5.....	0	2	98
17.5-18.0.....	0	0	100

¹³Baldwin, B. T. Physical growth and school progress. U. S. Bur. of Educ. Bull. No. 10, 1914. p. 66.

¹⁴Baldwin, B. T. A measuring scale for physical growth and physiological age. Fifteenth Yearbook of this Society, 1916. Part 1, pp. 11-12.

As Crampton points out, this table demonstrates the fact that physiological and chronological age do not coincide. Also, "at characteristic ages, the mature are more than 33 per cent heavier, 10 per cent taller, and 33 per cent stronger than the immature."¹⁵ Crampton says further:

Each physiological age group contains individuals who vary much among themselves as to their real physiological age. For instance, the prepubescents are fifty-five per cent of the total number at the age of 13.25 years. Some of these, fourteen per cent of all that age, will become pubescent within a half year; others, one per cent of all, will not become pubescent until 16.75 years of age. This one per cent is, therefore, three years younger physiologically than the fourteen per cent. In a similar manner, the individuals in the postpubescent groups vary as to the number of years elapsed since they have passed through pubescence.¹⁶

CRITERIA FOR JUDGING ONSET OF MATURITY

Measurements of height, weight, strength and vital indices when compared with certain physiological changes, notably in the sex organs, have led certain investigators to the opinion that height, weight, strength, and vital indices may be taken as criteria for the onset of maturity. Foster, for instance, believes height alone may be used as a criterion for classification according to physiological age;¹⁷ and Baldwin thinks height and weight appear to offer excellent objective standards for determining maturity for both boys and girls.¹⁸ Crampton, who has done extensive work in this field, when classifying boys with whom it was inconvenient to employ the method of direct examination, used the following procedure:

The boys formed a line and passed in review, each stating his age to the examiner. He was then given a number—one was most mature, five least. The following signs were noted: The voice (changed and low or unchanged

¹⁵Crampton, C. W. Anatomical or physiological age versus chronological age. *Ped. Sem.*, 15: 1908, 230-237.

¹⁶Crampton, C. W. Influence of physiological age on scholarship. *Psych. Clinic*, 1: 1907, 115-120.

¹⁷Foster, W. L. Physiological age as a basis of classification of pupils entering high schools. *Psych. Clinic*, 4: 1910, 83-88.

¹⁸Baldwin, B. T. Physical growth and school progress. *U. S. Bur. of Educ. Bull. No. 10*, 1914. 215 p. (bibl.). p. 67.

and high); the presence of the second molars; height and weight; the subcutaneous fat of the face and hands. In the immature the subcutaneous fat is more evident and adheres closely to the skin, which is of finer texture; in the mature the skin is firmer and thicker, less attached to subcutaneous tissues, which contain less fat. The prepubescent is chubby, the postpubescent may be fat, but there is an easily recognizable difference The principal of the school, after witnessing the classification of three classes, designated the gradings for 20 boys, 18 of which were correct and 2 varied but one step.¹⁹

SCHOOL WORK AND PUBESCENCE

Porter, Baldwin, Christopher, and Smedley have concluded that large children are intellectually superior to small children; Gilbert found no evidence to warrant such a conclusion, while West and Foster found a negative correlation. After an examination of the basis for the conclusions of other investigators, Baldwin remarks that "the important conclusion here was long ago anticipated by Porter, but on account of the doubtful attitude of these other investigators toward his result, it has received little or no attention. He very wisely says, 'No child whose weight or height is below the average (median or norm) for its age should be permitted to enter a school grade beyond the average of its age except after such a physical examination as shall make it probable that the child's strength is equal to the strain.'"²⁰

Thus, the weight of later and more careful studies seems to confirm the conclusion that larger children—and hence those maturing earlier—are intellectually superior to smaller children. In the light of the correlation found between good scholarship and physical maturity, we may expect to find a large percentage of the mature pupils in the elementary grades inherently dull. A number of experiments have thrown light upon this problem.

Crampton's investigations lead him to the conclusion that there is a correlation between scholarship and pubescence. Thus, he found boys of a given age (14.75 years) in groups from the first to the fifth term in the high school. Of the boys in the first term, 57.1 per cent were mature, and of those in the fourth and

¹⁹Crampton, C. W. The significance of physiological age in education. *Int. Cong. on Hyg. and Demog.*, 3: 1912, 224-236.

²⁰Baldwin, B. T. *loc. cit.*, p. 90.

fifth terms 83.3 per cent were mature. A consideration of the number of failures of boys within a certain age-group (13 years) showed 18 per cent of the mature failed of promotion, as compared with 27 per cent of those immature. Groups of boys aged 14 and 15, respectively, showed similar results. Considered on the basis of success in school, the class work of the immature was poorer than that of the mature, as fifty per cent more of the former than of the latter failed.²¹

The results of Baldwin's investigation agree in many particulars with Crampton's. His records show children of accelerated physiological development completing the last grade of the elementary school at the age of 12 years, 9 5-6 months, with an average of 84.35; and those of retarded physical development at the age of 13 years, 7- 3-4 months, with an average of 81.72. He concludes that if pedagogical age be accepted as a fair equivalent to mental development, "the tall, heavy boys and girls with good lung-capacity are older physiologically and further along in their stages toward mental maturity as evidenced by school progress than short, light boys and girls."²²

Stewart studied the physical growth and school standing of 207 boys over a period of years. When he considered the individual curves and correlations, together with the size of the boy at 14 years of age and his stage of development, the indications were that the tall or heavy boys of early development ranked better than tall or heavy boys of late development, and that light boys of late development ranked better than light boys of early or medium development. "Boys of medium size or medium period of development are hard to classify, though a majority of them appear to be doing school work of medium rank."^{22a}

An investigation was made in the New York City elementary schools to determine the quality of school work these average pupils were doing. In the fifth, sixth, and seventh grades pupils who

²¹Crampton, C. W. Influence of physiological age on scholarship. *Psych. Clinic*, 1: 1907, 115-120.

²²Baldwin, B. W. *loc. cit.*, p. 96.

^{22a} Stewart, S. F. A study of physical growth and school standing of boys. *Jour. of Educ. Psych.*, 7: 1916, 414-426.

were making poor marks were on the average 37, 40, and 46 per cent, respectively, more advanced than those doing satisfactory work. As a result of this investigation, it was recommended that "children who mature in the lower grammar grades be given the opportunity to obtain such form of instruction in the elementary school as will directly prepare them for immediately taking part in active life."²³

One hundred and fourteen classes in seven elementary schools in New York were arranged in physiological age-groups. In reply to a questionnaire, most of the teachers expressed themselves as favoring the segregation. They were practically unanimous in reporting a more unified class consciousness, which was advantageous to discipline. Further results, as indicated by the replies of the teachers, showed the mature were 'slower' than the immature; that both groups worked better when segregated; and that the approach to the subject-matter was different for the immature and the mature.²⁴

King studied a group of 272 children between the ages of 10.5 and 17 to ascertain the correlation between maturity and scholarship as shown by marks, first classifying them without reference to chronological age into three groups: immature, maturing, and mature. This classification showed that both boys and girls in the immature stage ranked higher than those maturing or mature. When he compared the marks of children of the same age but different degrees of maturity, he found the reverse to be true. He says:²⁵

While the number of cases is too small to furnish conclusive evidence, it points, in general, to this conclusion: The children of advanced development in these years are superior in scholarship to those who are less fully developed.

Foster classified 295 boys of an entering class of a New York City high school into eight sections according to physiological age based upon pubescence. These he compared with reference to dis-

²³Crampton, C. W. Anatomical or physiological age versus chronological age. *Ped. Sem.*, 15: 1908, 230-237.

²⁴From the Fifteenth annual report, physical training and hygiene, New York City, 1912-13, pp. 24-26.

²⁵King, I. *The High-School Age*. 1914, 235 p. (p. 53.)

charges, failures, and promotions, with 149 other boys grouped into four divisions. Another group of 18 boys, classified indiscriminately, furnished a further basis of comparison.

Foster says:²⁶

Records of smaller boys * * * * show fewer discharges, fewer failures, and more promotions. In fact, the four classes of the smallest boys average almost 20 per cent more promotions than the classes of largest boys. This apparently bad showing of the larger boys is to be explained by the fact that many of them have been delayed in their progress at school or by circumstances at home. Going to work is usually out of the question for a small boy, and in social affairs and in athletics he is not at all successful. The influences that tempt the big fellow to neglect school duties do not have the same force against the smaller boy.

The marked difference seems to be in the matter of discharges. May this difference not be due to the grouping of the boys of the same development making work so much more enjoyable that they do not have the same inclination to leave school?

Basing his judgment on Crampton's tables, Johnson estimates 45 per cent more pubescent and adolescent boys are found in the Cleveland elementary schools than in the high schools. Johnson's immediate concern in this instance was with recreation, and from the foregoing deduction he asserts that to confine adolescent games to the high school is an inconsistency in the administration of educational opportunities, for the need of such games is at least as great in the elementary schools. Again, the "practice in hardy games ought to be before the age when the most pupils enter the high school. The prepubescent years from 10 to 12 are, for the majority of boys, especially favorable for the beginning of athletic interest and skill. If participation is delayed beyond the elementary school period, sufficient interest and skill for personal participation in later years are far less likely to be developed."²⁷

Although the significance of physiological age is not recognized as some investigators think it should be in the actual treatment of children, attention has been called from time to time to its importance. Dr. Meylan, of Columbia University, writes (in a personal

²⁶Foster, W. L. *loc. cit.*, pp. 83-88.

²⁷Johnson, G. E. Education through recreation. *Cleveland Survey Foundation*, pp. 34-35.

letter) that in connection with his work with boys he has adopted for grouping for athletic contests four factors: Chronological age, physiological age, height, and weight; and that he has found physiological age absolutely essential in grouping for competition not only in athletic and aquatic sports but also in such subjects as nature-study, camp-craft, book reading, rifle shooting, and manual training. His experience leads him to believe that the factor of physiological age should be given much consideration by school teachers and superintendents in all phases of work.

P. Tecumseh Sherman, in his report as commissioner of labor, New York State, 1907, says that "there should be added to our law a requirement of a fixed minimum standard of physical development as a condition to granting a certificate of fitness to work in a factory." The National Education Association recommended in 1911, that child labor laws be so modified as to recognize the difference between the chronological age of a child and his maturity, and that the school-age limit should be determined not by the fact that the child has reached the age of 14 or 16, but by "physio-psychological data corresponding to the normal standard for the age limits required by the law. All children or persons failing to meet such maturity tests at the extreme school-age limit should remain under public supervision and control, either until they reach maturity or permanently." The committee on medical inspection of schools of the American Medical Association recommended that physical and developmental examinations should be sufficiently extensive to determine, as far as possible, the cause of arrested mental and physical growth; and that these data, taken in connection with the curriculum of the school and the sociological factors of the pupils' environment, "should form the essential basis for the adjustment of educational activities, both physical and mental, to meet the requirements of physical and mental health, growth, and development."²⁸

As a result of extensive experiments, Crampton recommends:

Where mature and immature children are now brought together in the same class in the elementary or high school, they should be separated into

²⁸Instances cited by Crampton. *Int. Cong. on Hyg. and Demog.*, 3: 1912, 224-236.

different classes, so that the pedagogical, ethical and social treatment to which they are subjected may be better adapted to their disparate and distinct requirements and abilities.

Child-labor legislation should be based upon physiological age.

All observations, records and investigations of children, and all treatment of children, whether pedagogical or medical, social or ethical, must regard physiological age as a primary and fundamental basis.²⁹

SEGREGATION OF THE SEXES IN THE SCHOOL

Whether girls and boys ought to be educated in the same classes should probably depend upon: (1) Whether the two sexes need training so different as to call for separate classes; and (2) whether the mental and physical characteristics of the sexes are so different as to necessitate separation in instruction. The first principle involves the discussion of curricula, but it may be pointed out that there are certain subjects where co-instruction can hardly be given. Thus, in many of the subjects given in industrial arts curricula, and in physical training, the sexes cannot be handled together. In social or civic education the content may be the same in some particulars and different in others, while in the so-called classical subjects the content might be the same.³⁰

According to Hall, boys and girls of the early adolescent age tend naturally to separate, for at least a few years and the family and home recognize this tendency. At the age of twelve or fourteen, brothers and sisters develop a life rather independent of each other, with different interests, home occupations, and games. This he believes to be natural and biological. It is often asserted, also, that boys do not like to enter into competition in school studies with girls at this age, perhaps because they recognize that girls excel them. Observations show ill health to be much more prevalent among girls than boys during the pubertal period and for the time immediately following, owing to the greater physiological change through which girls pass. Consideration of this point leads Burgerstein to believe that when curricula are heavy, it may be more healthful to present only a part of the studies in co-edu-

²⁹Crampton, C. W. Anatomical or physiological age versus chronological age. *Ped. Sem.*, 15: 1908, 230-237.

³⁰Snedden, D, and Henderson, E. N. Co-education. *Monroe's Cyc. of Educ.*, vol. 2, pp. 43-46.

cational classes, and to arrange the curricula in such a way as to take account of the different physical resistance of the two sexes as well as their different mental ability, for with boys the period immediately preceding puberty is of minor resistance, while with girls it is the period of development itself and the years immediately following. He also notes that after the pubertal development girls surpass boys of the same age in class work.³¹ Other writers have asked whether the health of girls may not be permanently impaired through too close devotion to the program of studies at this age.

As we have seen, girls mature on the average two years earlier than boys. Whether mental change be sudden or gradual, the maturity of the average girl of fourteen would seem to be sufficiently in advance of the maturity of the average boy of the same age to possess real significance educationally. If the theory that mature children require a different treatment from the immature is valid, it can be concluded that a certain amount of segregation will be desirable.

A noteworthy experiment in "limited" segregation was undertaken by Principal Armstrong in the Englewood school in Chicago. While he would not have boys and girls attend separate schools, the results of this experiment lead him to believe that limited segregation is desirable. He says segregation during the first and second years of the high school—ninth and tenth years—holds more boys in school, greatly improves their scholarship, and removes from them the feeling of unfair comparisons due to difference in degree of maturity of children of the same age but of opposite sex; while the possibility of adapting the work to the needs of each sex makes it easier to train for a higher degree of efficiency. A large majority of the teachers, practically all of the boys and a majority of the girls favored segregation; while the vote of the parents stood two to one in favor of the plan, with 90 per cent of the parents of the segregated children voting favorably.³²

³¹Burgerstein, L. Hygiene of co-education. *Monroe's Cyc. of Educ.*, vol. 1, pp. 652-655.

³²Armstrong, J. E. Limited segregation. *Sch. Rev.* 14: 1906, 726-738. Advantages of limited segregation in the high school. *Sch. Rev.*, 18: 1910, 339-350.

ADMISSION TO THE JUNIOR HIGH SCHOOL

The problem before the superintendent or principal with regard to classification of pupils reduces itself to these questions: (1) Who shall be admitted to the junior high school; and (2) how shall those admitted be classified? The answers to both these questions may perhaps be summed up under two heads: (1) working ability, and (2) instruction needed. These would include the health of the pupil; his natural capacity and interest; the probable time to be devoted to school work; and his command of the English language.

At the present time the majority of superintendents require the pupil to "complete the preceding grade" before he is admitted to the junior high school. There is something in this phrase which implies a certain amount of work that a pupil is required to complete in one grade before he is judged able to do the work of the next; and it also implies, that, if he has not done this work, he is not able, or at least he is not to be allowed, to attempt the work of the next grade. Against this proposition may be advanced the argument that working ability does not depend wholly upon work previously done or the amount of information acquired. Complaints of 'lack of preparedness' made by teachers from the college down, show that much of the required knowledge, power, or skill, as the case may be, has either never been acquired where it is supposed to have been or that it has been lost by the student. This point also involves a consideration of the psychological versus the logical method of apportioning subject matter. Further, results of tests in arithmetic, spelling, penmanship, etc., show that pupils in a single grade may vary in ability to the extent that a third may represent the average ability of the grade below, and perhaps a third represent the ability of the grade above. Finally, the majority of the arguments used against entrance examinations for the high school and college may be used here against requiring a pupil to "complete the work" of one grade before he is admitted to the next.

Examination of tables of the distribution of children by age and grade shows that in any school system we may expect to find

pupils who, assuming maturity at the average age, have been mature for one or more years before they are admitted even to the seventh grade. An extreme case was found in Portland, Ore., where the survey brought to light the fact that in the first six grades the children ranged from six to nineteen years in age, while in one grade was found a range of eleven years and in other grades a range of from one to ten or fourteen years. From this it was judged that an age-range of five years or more would be found in any grade from the first on, since no measures were taken in Portland to segregate pupils on account of age.³³ Pupils who have matured before they have reached the junior high school may be normal mentally, but retarded through ill health or absence from school, or they may be retarded because below normal mentally. In either case they can hardly profit much from instruction adapted to children chronologically and physiologically years younger than they. Moreover, these older pupils tend to be rapidly eliminated.

In inaugurating changes in the classification and treatment of children of the junior high school, two things must be considered. First, unless the child's previous experience is ignored, there will always be a factor which will make for moderation in the transition from methods employed in the first six grades to those to be employed later on. In other words, methods to which the pupil has become accustomed in the lower grades cannot be ignored by those organizing the junior high school. Second, as Inglis has shown, the organization of the junior high school will be substantially the same whether the saltatory or the gradual theory of development be accepted. In the first instance the variability of the time at which pupils arrive at pubescence would prohibit a radical change of method to correspond with accompanying psychical changes. Inglis says:

The gap between the last grade of the elementary school and the first grade of the high school as our system is at present organized is great and the readjustment which faces the boy or girl when transferred into the high school is tremendous. It is one of the principal aims of the reorganization of our system of education to eliminate that gap, to facilitate the necessary ad-

³³Report of the survey of the public-school system of school district No. 1, Multnomah County, Oregon. City of Portland, 1913. Chapt. 9.

justment, and to ameliorate the articulation between elementary and secondary education. * * * * If we adopt the theory of gradual development with reference to mental traits, we must recognize that our school system should be so organized that from the first grade of the elementary school to the last grade of the high school the change for the pupils will be gradual and without points of abrupt transition, without sharply differentiated administrative divisions, and without radical changes in materials and methods at any one stage. If we adopt the theory of saltatory development, we are forced to the same conclusion because of the variability found at any one stage and because of the distribution of pupils throughout the grades.³⁴

PRESENT REQUIREMENTS OF ADMISSION

In response to the question: "Upon what do you make entrance to the junior high school depend?", 68 out of 94 replies mention nothing more than "promotion", "completion" or "satisfactory completion" of the preceding grade. In this connection it is interesting to note that the California state law provides that the "high-school board of any high-school district or the trustees of any high school, may prescribe intermediate school courses, and admit thereto pupils who have *completed* the sixth year of the elementary school;" and that the school systems of California uniformly have this requirement.³⁵ A similar situation is found in Vermont.

Four other schools admit upon recommendation of the teacher or principal; four others consider primarily the child's ability to carry the work; and one makes no special requirement. Eighteen additional systems mention specifically that they admit "big" boys and girls, "over-age" pupils, "mature" pupils, or pupils who are "out of place" in the elementary school, whether they have completed the elementary course or not. Four of this latter class have exceptionally liberal entrance requirements. At Lafayette, Indiana, a pupil is admitted if he possesses the "ability to compute the form processes in arithmetic; ability to read intelligently; and ability to write well." At the Wisconsin High School the "requirements for admission to the sixth class [corresponding to the

³⁴Inglis, A. J. A fundamental problem in the reorganization of the high school. *Sch. Rev.*, 23: 1915, 307-318.

³⁵*School Law of California*, 1915, p. 152. Italics are the author's.

seventh grade] are “(a) ability to read, write, and speak simple English with *reasonable ease and accuracy*. (b) good health, (c) twelve years of age. (Applicants under twelve years of age will receive special attention, and if they show a *mental age* of twelve years or above, they may be admitted).” Solvay, New York, has essentially the same requirements, save that mature pupils are admitted from the elementary school—a department not maintained in connection with the Wisconsin High School. In Cincinnati admission depends upon “age, schooling, interest of the child, and recommendation of the principal.”

A number of cities have segregated classes because different curricula are being planned for the sexes; three have tried segregation for psychological reasons, but find no advantage accruing therefrom;³⁶ one would have segregation if the school were large enough; three schools will try some experiments in segregation;³⁷ six maintain separate classes for the sexes in whole or in part,³⁸ of which three are convinced that segregation has special advantages for pupils of this age. Two places have groups classified according to physiological age³⁹ (See Appendix, Section 3).

SUMMARY

A consideration of the mental and physical qualities of the adolescent points toward the following tentative conclusions:

1. There is psychological justification for the claim that educational practice should differ both in content and method for the pupil of the adolescent stage as compared with the pupil of the preadolescent stage.

2. Physical mental maturity, for which chronological age can not be taken as a criterion, should play an important part both in classification as to grade and group within the grade.

3. Since girls mature on the average two years earlier than boys, and since the changes through which the girl passes at this

³⁶Chanute, Kan.; Houston, Tex.; Richmond, Ind. Richmond has found it advantageous to separate the sexes in assembly.

³⁷Evansville, Ind.; Saginaw, Mich.; Paducah, Ky.

³⁸Santa Rosa, Cal.; Santa Ana, Cal.; Roanoke, Va.; Brookings, N. D.; Trenton, N. J.; Rochester, Minn.

³⁹Lafayette and Evansville, Ind.

stage are by no means parallel with those of the boy, a certain amount of segregation will be required for psychological and hygienic reasons, as well as for more utilitarian purposes.

4. Boys and girls who are clearly mature should not be kept in elementary classes with children who are physiologically younger, but they should be advanced to the instruction of the intermediate stage, whether they have completed the work of the preceding grades or not. It is the duty of the junior high school to provide suitable instruction for such pupils.

5. On account of the great variability in chronological age at which pupils arrive at maturity, methods of instruction should not be radically changed, even when the saltatory theory of mental development is held. Such a change in methods could be seriously considered only if pupils were grouped according to physiological and psychological development.

6. Previous methods of instruction to which the pupil has been accustomed should be a governing factor in the formulation of methods of instruction for the junior high school.

7. Further experimentation in segregation as to sex and grouping as to physiological age is needed. These plans, if demonstrated to be valuable, could be introduced into many high schools.

CHAPTER III

THE CURRICULUM

GENERAL PROBLEMS

The educational aims of the junior high school are dependent upon those of the complete educational system, of which it is one unit. Educational aims are commonly stated in terms of social efficiency and individual development. Differences in regard to the formulation of the junior-high-school curriculum arise according to the way these aims are interpreted, defined, or stressed; and according to the system of educational psychology the interpreter has formulated. The main controversy relates to industrial education and the differentiation of curricula. To some, the industrial activities of a community indicate that curricula paralleling them are to be offered in the junior high school because its students are soon to earn their livelihood in the industries; to others, community activities determine the curricula because they afford the real basis of instruction, or, in other words, because the pupil's potential knowledge or ideas have been formed and will be formed from his interaction with his environment. Still others believe that a certain amount of knowledge should be the common property of all, and that it is the duty of the schools to define these elements of knowledge and incorporate them in the curriculum. To the first group, a certain amount of skill is necessary for utilitarian purposes; to the second, skill or specific habits are entirely subservient to the educative process; to the third, specific habits are subservient to the acquisition of certain essential elements of knowledge or constants. Each of these three points of view includes the others to a degree determined by the amount of emphasis given to the particular point of view, to the educational psychology of the theorist, and to his general philosophy of education.

Democracy in education is a popular theme. For some, it means that the school shall give each child a maximal individual

development according to his ability and interests. These educators often accuse the high school of having ministered to the needs of a selected group only and declare that it must now minister to the needs of any and all. For others, democracy means unification; our common problems of life and government will be better met and handled by those who have learned to reason, and who have been impressed by the duty they owe to the nation and to society. While these educators are somewhat satisfied with the past accomplishments of the schools, they nevertheless recognize the necessity of reorganizing the present school system. Their chief concern, however, is with the content of the curriculum. A third group of writers makes more or less successful attempts at reconciling these two attitudes.

Such divergent views naturally entail controversy when a re-adaptation of the curriculum is undertaken. It is agreed that the schools should give the best preparation for life. But is this preparation best given by making the schools train somewhat specifically along lines indicated by social and industrial demands—a conception which requires separate curricula and perhaps separate schools; or is it best given by a curriculum built upon social demands, but which develops skill in industry only to the extent that it facilitates the advance of the educative process? The former plan implies less and the latter more differentiation according to individual tastes and capacities. Or, again, would not an individual be better fitted for life if he were to master those common elements of knowledge that may be proved to be worth while, and can not these be better presented in a common curriculum? Indeed, if we agree that it is the function of the junior high school to give this stock of common knowledge, does this not mean that pupils will be engaged in the same work, and that there will be but little differentiation as a consequence?

Snedden defines vocational education as that education which trains the individual to be an effective producer, and cultural education as that education which trains the individual to be the best consumer. In this sense he makes production along any line—professional, artistic, spiritual, or economic—the result of vocational education, while in the expenditure of leisure, in reading papers,

magazines, and books, and in the appreciation of art or music, or in the consumption of food, cultural education would function.

“Vocational education differs from general, or liberal, education fundamentally as regards its essential aims, and that, therefore, it will differ also, fundamentally, as regards the means and methods of instruction, as well as the administrative agencies which are intimately related to means and methods of instruction. It is further contended that vocational education and liberal education cannot be effectively carried on, so far as regards a given group of pupils, in a way which permits of a considerable blending of the unlike types of instruction. To attempt this is to defeat the aims both of liberal and of vocational training. One of the essential conditions of genuine efficiency in either liberal or vocational education is a considerable degree of concentration on the part of the pupil on the one type or the other, so far as regards the expenditure of this time and energy in any given time.”¹

Snedden makes essentially the same distinction for the subjects of the junior high school. In discussing “courses for youths of 12 to 14 years of age” he sees two prime factors that will make for a wider latitude in making individual programs of study: (1) “the number and variety of subjects of training and instruction;” and (2) the “variability of the educational needs.” He then classifies school subjects into two types, and says that “the conspicuous result expected in the case of the alpha type is ability to *do*, to *express in action*, while the most tangible result expected in the case of the beta type is *appreciation* or, in one sense of the words, *interest*.” In a suggested curriculum he indicates that some of the subjects will be predominately “alpha,” some predominately “beta;” and some either “alpha” or “beta,” depending upon the student. The basis for both positive and negative proscription of subjects will be natural endowment—the requirement that the pupil receive instruction and training necessary or greatly advantageous to him in after life—and social demands. “A heavy burden rests upon authorities to establish the presumption that it is *better* that these proscriptions should thus be made than that each pupil, subject to the general requirement that he must

¹Snedden, D., and Bagley, W. C. Fundamental distinctions between liberal and vocational education. *Proc. N. E. A.*, 1914, 152-3.

Snedden also makes this distinction in his *Problems in Educational Readjustment*. p. 115.

employ all of his school time profitably, shall freely elect his own course.'²

Bagley does not agree with this distinction between liberal and vocational education. He believes it is really the old one of education for leisure and education for work. He points out that an individual does not produce for a certain period, and then consume for another period, but as a producer an individual is also a consumer. Certain fundamental activities, he says, cannot be classified either as predominately productive or as predominately consumptive, while certain essential facts are neither productive nor consumptive.³

With regard to vocational education, Dewey holds that the guiding aim must be first of all to keep youth under educative influences for a longer time. Gary, Chicago, and Cincinnati, have shown that the best way to reduce elimination is to make instruction significant to pupils. But "in these places the aim has not been to turn the schools into preliminary factories supported at public expense, but to borrow from shops the resources and motives which make teaching more effective and wider in reach." "In the second place, the aim must be efficiency of industrial intelligence, rather than trade efficiency." Providing skilled workers, even in superior crafts, is not the chief problem. Extreme specialization in manufacturing processes, automatic machinery, the rapid change by means of inventions of the forms of machine industry, the extreme mobility of the laboring population, and the fact that 95 per cent of the labor employed in the construction of such a complicated machine as the automobile, are facts that "cry aloud against any trade training that is not an integral part of a more general plan of industrial education. They speak for the necessity of an education whose chief purpose is to develop initiative and personal resources of intelligence." The preparation of skilled laborers for the trades that we have today would, moreover, tend to keep the present industrial regime as it is, and would not tend to work any

²Snedden, D. The character and extent of desirable flexibility as to courses of instruction and training for youths of 12 to 14 years of age. *Educ. Ad. and Super.*, 2: 1916, 219-234.

³Bagley, W. C. Fundamental distinctions between liberal and vocational education. *Proc. N. E. A.*, 1914, p. 164.

change, which is highly desirable.⁴ Nor is it altogether true that definite trade training would always mean competency for self-support. One of the causes of incompetency and poverty lies in the fact that individuals have been educated to only a special line of activity, which is transformed or even eliminated by social progress.⁵

Dewey states his position with reference to the dual system of control of the vocational and the regular school system in no unmistakable terms. He opposed the proposed Indiana legislation and the Cooley bill on the following grounds:⁶ It will produce class stratification, because there will be a segregation of the children of the more well-to-do families of the community from those children who will presumably earn their own living by working for wages in manual and commercial employments. But this is not all. These schools were to be established entirely separate from the present educational system, directed and taught by a different body of administrators and teachers, and receiving their support directly from the state. Dewey asks if any sound reasons could be advanced against further administrative segregations in behalf of religious creeds or foreigners, if commercial bodies and employers of labor were to procure a state supported system of schools in their own behalf. Not that all the employers are seeking their own ends, but that those who are doing so do not realize that there will be a tendency towards class stratification. Again, in the wide-spread educational adjustment taking place at present, an attempt is already being made to add to the curriculum certain subjects of the vocational type. If two types of schools should be established, the result would be a duplication of facilities, with added expense; the forces effecting a re-adaptation of the traditional curriculum of the elementary and high school to meet the change of social conditions, would be driven into a narrow channel, while the old curriculum would be "left frozen in its narrow form."

⁴Dewey, J. A policy of industrial education. *Man. Tr. and Voc. Educ.*, 16: 1915, 393-397. Published also in *The New Rep.*, 2: 1914, 11-12.

⁵Dewey, J. Philosophy of education. *Monroe's Cyc. of Educ.*, vol. 4, pp. 697-703.

⁶Dewey, J. Industrial education. A wrong kind. *The New Rep.*, 2: 1915, 71-73. Splitting up the school system, *Ibid.*, 283-284.

Snedden and Dewey are not at agreement at this point.⁷ To Snedden's mind, the question of unit or dual control is not fundamental, but rather the question: "what constitutes sound pedagogic theories as to the aims and methods suited to vocational education in schools, and secondly, the most effective organization and administration of the means designed to realize them." It has been shown that Snedden draws a distinction between vocational and liberal, or cultural, education, and believes these two forms of education cannot well be carried on together. Social and economic conditions, he adds, make evident the need of vocational training, since only a few of the industries are so organized that they can give a good vocational training. Moreover, schoolmen, however well intentioned, are apt to be impractical and fail to appreciate actual conditions. Three distinct conditions are necessary if this form of education is to be effective: practical participation in productive work; technical studies related to productive work; and general vocational studies designed to promote the vocational branches. Teachers must be masters of the trade or calling they are teaching,⁸ for experience has taught us the ordinary school man has inadequate ideas concerning vocations and is incompetent to teach them. Therefore, he reluctantly concludes, if we are to have vocational education for the rank and file of the youth as well as for the favored classes, we must supply special schools for this purpose.

In reply, Dewey says Snedden should define what he means by vocational education. He himself believes vocational education does not mean the "identification of education with acquisition of specialized habits in the management of machines at the expense of an industrial intelligence based on science and a knowledge of social problems and conditions." Vocational education has as its supreme regard the development of such intelligent initiative, ingenuity and executive capacity as shall make workers, as far as possible, the masters of their own industrial fate.

The "demands of society," as far as trade training is concerned, are formulated by the representatives of the different in-

⁷Snedden, D. Vocational education. *The New Rep.*, 3: 1915, 40-42.

Dewey, J. Education vs. trade training. *The New Rep.*, 3: 1915, 42-43.

⁸Snedden, D. *Problems in Educational Readjustment*. Ch. 8.

dustries. This is recognized by educators who discuss vocational training for the public schools. In this connection, it is interesting to note the attitude taken by some of the leading corporation schools. Steinmetz, for example, calls the corporation school a continuation school and says that, since its success is dependent upon the character of public-school pupils, the period of general education should be lengthened rather than shortened. He would have such subjects as manual training taught for educative and recreative value and as means of physical development, but stands squarely against the extreme utilitarianism which some would bring into the public schools. He says: "Vocational training, as extension work after graduation from general education, is necessary to retain our industrial advantage. But instruction in the trades, vocational training in the grades, is, in my opinion, vicious and should be opposed."⁹

According to the literature on corporation schools it would seem that his view is fairly representative. Furthermore, it is the policy of some of these schools to train not only in specific trade habits, but to introduce academic and "cultural" subjects as well.

Bagley attacks the problem from the side of democracy or social solidarity. A high level of common ideas—which are the implements or means of thought—"is essential to collective thinking on a high plane," and the "efficiency of a democracy is directly dependent upon the number of ideas that are common to all the members of the democratic group." An evaluation should be made of the elements of the different subjects, such as history or arithmetic, in order that the most valuable will be taught; and there should also be enough uniformity to enable all pupils to acquire these common elements. Social solidarity can best be insured if the schools devote their efforts toward the elevation of the general level of common intelligence, which is "pretty clearly indicated by the extent of the common elements in the school program."¹⁰ He

⁹Steinmetz, C. P. The relation of the corporation school to the public schools. *Nat. Assn. of Corporation Schools, Rept. of first annual convention*, Dayton, 1913, pp. 297-301.

¹⁰Bagley, W. C. The justification of a certain measure of uniformity. *Univ. of Ill. Sch. of Educ. Bull. No. 13*, 1914, 12-21.

calls the doctrines of freedom, interest and spontaneity, "indispensible ingredients" of an "effective educational theory." They must, however, "be supplemented by the more virile virtues of duty and of effort and of sacrifice." He stresses effort as necessary to mental growth, accuracy and thoroughness as fundamentals, and order and sequence as essentials to mental mastery.¹¹ He says with regard to individual differences that all children cannot be put through the same "educational mill," but believes that, until more study is given to the evaluation of the present curriculum, we will not be in position to say with any certainty just how much differentiation should be made.¹² In any event, "if ever a country should adopt the policy of an iron education, it is our country at this time."¹³

This view led Bagley to make a vigorous objection to the curricula outlined by Ayres in the Springfield survey, which provided for differentiation beginning with the seventh grade. He questioned Ayres' interpretation and comparison of European educational systems, and asserted that social stratification similar to that in Europe would result from a differentiation such as outlined by him.¹⁴

This challenge elicited from Judd a reply as vigorous. With regard to the European situation, he stated that the psychological and pedagogical considerations underlying their schools are not fundamentally different from those with which we have to deal.¹⁵ Psychologically, the essential consideration is that the twelve-year-old is in the first "flush of adolescence"—he begins to have individuality, to look upon a larger world, and to consider his duty to himself and society. Moreover, he will be half through adolescence at the age of fourteen or fifteen, and we must therefore begin with the beginning of adolescence if we would exert the

¹¹Bagley, W. C. Some handicaps to education in a democracy. *Sch. and Soc.*, 3: 1916, 807-816. See also Snedden's discussion of this article, pp. 816-818.

¹²Bagley, W. C. The justification of a certain measure of uniformity. *Univ. of Ill. Sch. of Educ. Bull. No. 13*, 1914. 12-21.

¹³Bagley, W. C. Some handicaps to education in a democracy. *Sch. and Soc.*, 3: 1916, 807-816.

¹⁴Bagley, W. C. The six-six plan. *Sch. and Home Educ.*, 34: 1915, 3-5.

¹⁵Judd, C. H. The junior high school. *Sch. Rev.* 23: 1915, 25-33.

largest influence. This means the elementary method naturally ends with the sixth grade, and with the seventh, differentiation must be made because of individual differences.¹⁶ The eight-four plan is not a product of a struggle for democracy, nor has it been proved that the high school is democratic. The elementary school "was at the outset an undefined, and in many respects, unlimited institution," as is shown by different schools of seven, eight, or nine grades. But the old grade-high-school plan is unnatural, and is being abandoned. We need to "remove the obstacles to progress now found in the high school and grades," and make for true economy by avoiding wasteful duplication, by facilitating progress, and by unifying the school system. In Judd's opinion, the real danger connected with the junior high school is that there may not be sufficiently thorough pedagogical and psychological study given to the reorganization of the subject matter.

In different articles and editorials that he has written, Johnston¹⁷ leaves no doubt about his position upon curriculum differentiation. He characterizes as "absolutists" those who would carefully select certain "absolute essentials" for all pupils, and who favor a non-differentiated curriculum through the junior high school to bring it about that all pupils should be taught these "absolute essentials." Such a plan is a "daring dream of national uniformity" and "tends to remind us forcibly that the belief in content is still widely current." In his opinion, as in Judd's, pupils between the ages of 13 and 15 are by nature different, and hence require different treatment. As a "socialized conception of all education" will furnish the medium for development, there will come as a consequence a "richer democracy of real self-directing individuals who have had meted out to them by a public educational system the sort of education which the industrial and social state made necessary, as well as the sort always necessary from the very fact of the humanity of man himself."¹⁸

¹⁶Judd, C. H. The junior high school. *Sch. Rev.*, 24: 1916, 249-260.

¹⁷See *Educ. Ad. and Super.*, vols. 1 and 2.

¹⁸Johnston, C. H. What is curriculum differentiation? (Editorial) *Educ. Ad. and Super.*, 2: 1916, 49-57.

Johnston distinguishes two forms of curriculum making. One of these he refers to as clerical and manipulative, and the other as discriminating and educational. The former shows skill on the part of the principals in organization and systematization alone, while the other represents keen insight into individual and group differences. By means of a manipulative program, a large number of curricula are frequently shown in a school, though in reality but slight variation exists between them.¹⁹ He evidently is of the opinion that the average high-school principal makes curricula in this manner, while on the other hand educational theorists do not give advice specific enough to aid him in his work. Thus, the following quotation:

Bewildered American High-School Principal: Gentlemen, I have no such clear ideas of the purposes of the high school as have my visiting colleagues from Europe or the University specialists here present. Whenever we American high-school principals hear of some new curriculum we at once regroup our high-school subjects and thus provide, on paper, the curriculum desired. Most of these curriculums, however, are merely the result of a re-shuffling of courses. They are merely paper curriculums. As a matter of fact, we have in America no "pillar theory" of curriculum construction. I recently read carefully the published curriculums of high schools of American cities with about 20,000 population. These 40 schools offered 180 curriculums, averaging more than four curriculums each. I know that no one of them furnishes four thorough and distinguishable trainings for as many intelligibly grouped divisions of the students. I myself print eight curriculums for our pupils, but most of them represent varieties of the college preparatory. Those that do not are vocational mainly in name. From the points of view of the functions of secondary education the principles of curriculum construction, the basis for assigning students to curriculums, systems of educational and vocational guidance and the securing of teachers of vocational education, I am forced to admit to this body that I am entirely at sea. I feel that the American high school is somehow on trial, and that radical readjustments are impending. I have found this conference absorbingly interesting. I hope, however, engrossing as these speculative questions are, that something more definite may issue from it before we adjourn. We principals have to do something each day. We wish safe guidance.²⁰

¹⁹Johnston, C. H. Curriculum adjustments in high school. *Sch. Rev.*, 22: 1914. 577-590.

²⁰Johnston, C. H. The high-school issue. A symposium. *Educ. Ad. and Super.*, 7: 1915, 29-49.

A discriminating program, on the other hand, is organized with reference to individual needs.²¹ Johnston does not believe a "discriminating program" will rigidly separate groups of pupils, thereby working an educational disadvantage to some—although he recognizes this is a possibility—because a number of courses will function in different curricula. If courses are modified for their different "curriculum settings," this in no way "precludes or lessens the probability of their preserving their distinctive educational values as 'subjects'."²²

However, certain principles are common to discussions of subject matter. On the one hand is the tendency to take definite account of the pupil's experience as the starting point of all instruction, and consequently to draw upon the immediate environment for subject matter; on the other hand is the tendency, perhaps more marked in the elementary school, to fix certain constants of instruction. One of these views does not necessarily exclude the other. They come closely together in that the constants are chosen because of their importance and frequency in daily life, which means the constants are the most common environmental elements found in the life of the average person. However, the points of emphasis differ, being the child in the first case, and subject matter in the second. Emphasis upon the psychology of adolescent and the principle of interest²³ brings it about that less heed is given to the acquisition of standardized subject matter; while with increased stress upon the acquisition of subject matter comes a tendency to lose sight of the psychological makeup of the child.

The word "cultural" is given many meanings, the most common being almost synonymous with "informational" or perhaps "conventional," and is applied to subjects closely akin to those found in the "old curriculum" in comparison with the more "useful" subjects of a prevocational or vocational character. "Cultural" is used by other writers to mean that "habit of mind which

²¹Johnston, C. H. Curriculum adjustments in high school. *Sch. Rev.*, 22: 1914, 577-590.

²²Johnston, C. H. What is curriculum differentiation? (Editorial) *Educ. Ad. and Super.*, 2: 1916, 49-57.

²³See Dewey, J. *Interest and Effort in Education*. 1913, 101 p.

perceives and estimates all matters with reference to their bearing on social values and aims." Again, "culture must be related to the student's future life. I do not believe that any real culture comes from following a prescribed course of study; but culture will always come with the love of the work being done, from a realization that the work has a clear relation to the future vocation." According to this conception, any subject may be cultural.²⁴

None denies that the curriculum must be "vitalized" or made "more worth while" to the pupil. Here again is a term with a dual significance. For some, "vitalization" means the application of social conditions to arithmetic—using social conditions to study arithmetic—; for others, it means the application of arithmetic to social relations—studying social conditions and learning arithmetic as a consequence.

Current educational psychology deals for the most part with response to the environment; less account is taken of original nature than of the environmental elements. Only occasional references are made to transfer of training. None advocates teaching any subject for the sake of its formal training alone, but the majority would teach each subject in such a way as to secure from it "all possible drill in correct methods of thinking and worthy ideals of mental action."

PRINCIPLES UNDERLYING REORGANIZATION OF THE SEVERAL SUBJECTS

English. The commonest ends set forth in the teaching of English are the appreciation of the works of standard authors and an increased power of oral and written expression.²⁵ Somewhat subservient to these ends is the insistence that many place upon the development of the ability (which should be definitely measured) to read silently. To these aims is added the inculcation of moral principles through the study of literary characters; while an effort is also made to make the youth realize that convention de-

²⁴See Hall, G. S. *Educational Problems*. 1911, 2 vols. (Vol. 1, p. 588.)

²⁵Preliminary statements by chairman of committees of the commission of the N. E. A. on the reorganization of secondary education. *U. S. Bur. of Educ. Bull. No. 41*, 1913. 80 p.

mands correct language, thus stimulating the tendency to correct speech. Little or no emphasis is placed on the technique or development of literature as such. Penmanship, spelling, grammatical and rhetorical structure are accordingly made tools of expression. These subjects, instead of being taught in isolation, are well grouped together under the subject "English," and each is made to contribute its share towards the goal aimed at by "English."²⁶

In expression three things are fundamental:²⁷ first, there must be something to express; second, a real opportunity for expression must be provided; and, third, expression must be guided. Imagination does not mean playing with impossible material, but a constructive process based upon elements of actual experience. Therefore, subjects for written and spoken English will be those arising from the vocational activities of the pupils, from their dramatic, athletic, or other school interests, from the reading of wholesome magazines and books, or from any other interest. In like manner, assigned readings whose form and content are beyond the pupil will not be made, but readings will be given which produce a genuine reaction because they contain elements found in the actual working knowledge of the pupil. This, of course, does not mean that no place will be found for the classics. If the approval of the social group is called into play, as in the classroom or auditorium, or if expression is vitalized in some other way, as in connection with the printing press, the opportunity for expression would be more ideal. Moreover, guidance in expression consists of emphasis skilfully placed upon the mechanics of oral and written expression as the occasion arises, while continued guidance should finally lead the pupil to some appreciation of technique in literature for its own sake.

*Social Subjects.*²⁸ Under the head of social subjects are included community civics, elementary economics, history, and often geography. It is intended that these studies shall aid the pupil in

²⁶Lawson, M. F. The socialization of language study in the junior high school. *Ped. Sem.*, 23: 1916. 76-85.

²⁷State Dept. of Educ., St. Paul. *Bull. No. 51*, 1914. p. 7.

²⁸See The teaching of community civics. Prepared by a special committee of the commission on the reorganization of secondary education, N. E. A. *U. S. Bur. of Educ. Bull. No. 23*, 1915. 55 p. (Bibl.).

interpreting his immediate social environment and in establishing a standard of conduct with reference to civic institutions. The other aims of history—to train the reasoning powers, to give skill in forming judgments, and to afford ethical training—are not entirely neglected, but they are included in the social efficiency aim rather than made coördinate with it. Briefly, the method advocated is to begin with the study of the civic and economic problems in the immediate environment, and to follow these as they lead outside the home and school to the city or community, state, and nation. Obviously, those social factors most affecting the life of the child should receive first attention, and these will perhaps vary with the community to some extent. However, such topics as community health, industrial conditions, public recreation, city government, etc., are advocated as being suitable for all. It is to be insisted, however, that the pupil be brought into actual contact with the problems he is studying.

Chairman Jones of the Committee on Social Studies on Reorganization of Secondary Education, quotes approvingly Professor Robinson, who presents an ideal in history instruction:

Obviously, history must be rewritten, or, rather, innumerable current issues must be given their historic background. Our present so-called histories do not ordinarily answer the questions we would naturally and insistently put to them. * * * * We ask, 'How did our courts come to control legislation in the exceptional and extraordinary manner they do?' We look in vain in most histories for a reply. * * * * It is only to be wished that a greater number of historians had greater skill in hitting upon problems of the present.

When this view is taken by those formulating junior-high-school curricula, little of the history taught in the seventh and eighth grades will remain, but history as such will be used to explain problems arising in connection with studies of present social significance.²⁹

To find what cities having junior high schools were doing in the reorganization of their history courses, Tyron sent question-

²⁹Preliminary statements by chairman of committees of the commission of the N. E. A. on the reorganization of secondary education. *U.S. Bur. of Educ. Bull. No. 41, 1913.* p. 23.

naires to 68 places. The returns lead him to believe that on the whole but little progress has been made. In the seventh grade, American history to about the year 1789 is given; in the eighth, American history from that date down to the present time is studied, but with the most of the emphasis given to the period ending with 1865. Ancient history is extensively taught in the ninth grade.

From his questionnaire returns and from other work done in history, Tyron suggests certain points to be considered by those working out junior-high-school history courses. He says:

First, it must be recognized that the junior-high-school history is to follow a course that all have had thorough training in, and precede a course which all may or may not take. Secondly, the fact must be recognized that not all the pupils will finish the three years of the junior high school.* * * * In the third place, the course will be planned for the sake of the pupils taking it, rather than for the sake of the subject, history. * * * * Fourthly, there is a certain amount of history which all pupils must know before they can do any subsequent work in this subject with the best results. And, finally, the history courses in these grades must be made to function in the form of a key to a right understanding of present-day conditions.³⁰

*Mathematics.*³¹ In the place of arithmetic, algebra and geometry, which represent a logical and not a psychological sequence, a course in mathematics should be substituted which represents a unification of these three subjects after certain parts of each have been eliminated. Arithmetic, which will perhaps form the bulk of instruction in the seventh and the first half of the eighth grades, must be correlated with the life of the student, which means that emphasis will be placed upon the social and economic aspects of arithmetic. As an aid in analysis, however, the equation and the unknown term from algebra should be introduced wherever needed. Mensuration and other topics of measurement should be facilitated by the introduction of constructional geometry. The last half of the eighth year and the first part of the ninth

³⁰Tyron, R. M. History in the junior high school. *Elem. Sch. Jour.*, 16: 1916, 491-507.

³¹See Breslich, E. R. Forward movements in secondary mathematics. *Sch. Rev.*, 24: 1916, 283-297. (Takes up the principle of mathematics for its own sake.)

will consist mainly of algebra, with special emphasis upon the equation, but at the same time the facts of geometry applicable to the work in algebra could well be given. Toward the end of the ninth year the work will be mainly geometry.

The following table, taken from Jessup, is based upon a questionnaire sent by him to about 1700 city superintendents and to every sixth county superintendent in the United States. It shows:

TABLE 5

THE PERCENTAGE OF SUPERINTENDENTS WHO FOR CERTAIN TOPICS FAVOR (1) ELIMINATION (2) LESS ATTENTION (3) ELIMINATION OR REDUCTION OF TIME; AND (4) MORE ATTENTION

	1	2	3	4
Apothecaries' weight	53	36	89	
Troy weight	42	44	86	
Furlong	72	19	91	
Rood (sq. Meas.)	20	42	62	
Dram	60	23	83	
Quarter (avoirdupois)	68	17	85	
Surveyors' tables	47	40	87	
Foreign money	28	57	85	
Folding paper	35	35	70	
*Reduction	22	48	70	
Long Meas. G. C. D.	35	40	75	
L. C. M.	22	45	67	
True discount	47	31	78	
Cube Root	46	37	83	
Partnership	25	44	69	
Compound proportion	52	32	84	
Com'p'd and complex frac'n.	26	44	70	
Cases in percentage	20	35	55	
Annual Interest	41	31	72	
Longitude and time	8	31	39	
Unreal fractions	74	15	89	
Alligation	85	9	94	
Metric system	20	44	64	
Progression	67	20	87	
Aliquot parts	21	32	53	
Addition				75
Subtraction				69
Multiplication				72
Division				70
Fractions				65
Percentage				50
Interest				39
Saving & Loaning				61
Banking				39
Borrowing				37
Bldg. & loan assns.				48
Investments				44
Bonds & stocks				20
Taxes				53
Levies				35
Public expenditure				55
Insurance				55
Profits				46
Public Utilities				57

*Reduction of more than two steps.

Jessup says:

The percentage of superintendents who favored the plan of increasing the emphasis upon certain subjects was tabulated so as to show the different attitudes toward each of the subjects suggested. A large percentage were in favor of giving more emphasis to the fundamental subjects such as addition, multiplication, and division. There was also a very strong sentiment in favor of increasing the emphasis on the applications of arithmetic to the

social and economic conditions of the day; such as the saving and loaning of money, taxation, public expenditure, insurance, etc.

Jessup found the median time spent upon arithmetic in the seventh grade is 150 minutes; in the eighth grade, 165 minutes per week. He adds:

Again, if one-fourth of the cities are able to get satisfactory results from 20 to 30 minutes per day or less in the fifth to eighth grades, certainly we have cause to question the reason why another fourth of the cities spend from 40 to 60 minutes or more per day in these grades. On the whole, it seems safe to say that the wide variation of recitation time in the various cities of the United States suggests the possibility of attempting to affect an economy of time by means of standardizing the number of minutes in the recitation period.

* * * * It may be said, however, that practically all of the investigations which have been made thus far on this subject indicate that there is less relation between the time expended and the achievement than many have supposed.³²

After investigating first-year algebra, Rugg concludes:

The subject-matter of first-year algebra should be definitely organized in the form of a specific statement of (a) the 'mechanical' processes which should be drilled until perfectly habitualized; (b) the typical 'original' or applied problems in which should be given at least a definite minimum of practice in the application of the mechanical processes to new problematic situations.

The study of errors made by pupils indicates that *inefficiency in algebraic solution is due primarily to lack of mastery (habitualization) of a few typical operations which recur frequently in such solution*. . . . This condition points to a need for a thorough study of (1) the psychology of the learning process in algebra; (2) the relative emphasis that should be placed on the teaching of certain processes, *i.e.*, the relative drill emphasis.³³

Science. A spirited discussion has taken place recently with regard to the merits of general science as a high-school subject.³⁴ It might be thought that the question does not apply with equal

³²Jessup, W. A. Economy of time in arithmetic. *Elem. Sch. Teach.*, 14: 1914, 461-476. Published also in *Proc. N. E. A.*, 1914, pp. 209-22.

³³Rugg, H. O. The experimental determination of standards in first year algebra. *Sch. Rev.*, 24: 1916, p. 66.

³⁴The *School Review*, Volume 23, 1915, contains a number of articles which present both sides of the question.

force to the junior high school, whose students are younger, but if it should be agreed that general science, on account of its composite nature, has no place in a four-year high school, a corresponding diminution in the number of such courses given in the seventh and eighth grades could be expected. It is argued by some that the true scientific attitude can hardly be attained through the study of "a mosaic made up of fragments of information" which "breaks up all natural connections and forbids the development of those ideas which relate and hold facts." It is argued by others that the unity originating from those facts of science which are found in the environment of the individual is the only true unity, for it approximates the unity of life itself. The latter view perhaps accords better with the pedagogical principles underlying the reorganization of the other courses.

It cannot be questioned that the present science courses need reorganizing. A plentiful supply of textbooks is in existence, containing fragments of botany, zoology, physics, chemistry, geography, etc. But little attempt has been made, and less success has been achieved, in making principles concrete through application. It seems, finally, that a majority believe there is a place in the curriculum for a general science of the right type.

Taylor's recent study throws some light upon the status of general science. Of 153 Iowa cities, 120 had courses in this subject, of which 12 were offering it one year and 21 one-half year. Of 196 California cities, 97 had courses in general science, of which 82 were offering it one year and 8 one-half year. In Iowa most of the cities gave general science 5 times a week; in California the range was from 1 to 10 periods a week. For the most part, general science was given in the ninth grade. All the schools except three Iowa cities were giving laboratory work, field work, or combinations of laboratory and field work.³⁵

In a more recent report on general science in Iowa high schools, Lewis found that 28 per cent of the total number of schools in that state were offering the subject, and that 15 per cent contemplate introducing it soon. Seventy-seven of the 100 schools offering

³⁵Taylor, A. M. General science situation in Iowa and California. *Sch. Rev.*, 24: 1916, 20-25.

general science introduced it in 1915-16. In 90 schools the course was one semester in length.

From his figures Lewis concluded that "in a majority of cases there has been a marked displacement of other subjects. This displacement has affected physical geography, botany, and zoology rather seriously." Replies "show very clearly that general science at present is a ninth grade subject in Iowa high schools; in but four schools has any attempt been made to teach the subject in the eighth grade. In but one school is the subject taught in the tenth year." Twenty-five schools either failed to answer or frankly say that they do not have laboratory work in connection with general science; 23 schools reported only a very small amount, usually given for demonstration purposes in class.^{35a}

Foreign Language. The foreign languages advocated for the junior high school fall into two groups: ancient language, or Latin; and modern languages, or German, French, Spanish, etc. The aims that should govern instruction are largely the same. The advocates of both groups take the position that the pupil should become familiar with the fundamental principles of the language; he should improve in his ability to use English, should develop an interest in the life of the nation whose language is being studied and appreciate its influence on his own nation, and should develop attitudes and habits of mental industry. The aims differ in one particular. In the study of modern language the pupil should acquire the ability to use the language to some extent in speaking or writing.

A close resemblance obtains in methods of instruction. Both groups would begin with words and simple sentences about familiar objects, following this by the introduction of simple, interesting stories. Only occasionally is the mastery of conjugation and declensions advocated as an end; on the contrary, as little grammar should be given as possible, especially at first, and form should never precede actual use. As the course proceeds, more emphasis is placed upon verb or noun endings. Since the seventh or eighth-grade child cannot be expected to appreciate literary style or mas-

^{35a} Lewis, E. E. General science in Iowa high schools. *Sch. Rev.*, 24: 1916, 426-435.

terpieces of literature, texts of this kind are being excluded, and tales of folk-lore, description and travel are finding a place in their stead. There is no general consensus that the direct method should be exclusively used in teaching either Latin or a modern language, but there is a consensus of opinion that a combination of conversational and text-book methods will give the best results. Both ancient and modern-language theorists emphasize the value of reading.

A difference in method does exist, however, and to a degree dependent upon the amount of stress placed upon the acquisition of a reading and speaking knowledge of the language. In Latin more emphasis is given to English derivatives; while in modern foreign language correct pronunciation is stressed. Since ill-formed habits cause loss of time, it is necessary that the pupil acquire phonetic accuracy from the beginning. Moreover, the vocal organs are more plastic at this age, and the other interests of school and life are not so urgent. Therefore, great care should be taken to insure correct pronunciation from the beginning. It will aid in accomplishing this end to give frequent individual and class drill in pronunciation, dictation exercises, and songs, poems, and short stories to be memorized.

In actual practice, marked preference is shown for Latin and German, although no reason is given for this preference. Miss F. L. Stuart, in the 1914 High-School Conference of the University of Illinois, urged that more attention be given to Spanish, that all claims made for German or French could be made equally well for Spanish, while the latter language possesses practical advantages far surpassing the former. The need for Spanish is being recognized by many colleges; while the evening schools in various cities, Y. M. C. A. schools, etc., spend much more time upon it than formerly. This is in recognition of the fact that, if the United States is to compete with European countries, men able to converse with the people of Latin-American countries in their own language and who understand Latin ideals must represent the commercial interests of this country.³⁶

³⁶Stuart, F. L. The demand for Spanish. Univ. of Ill. Sch. of Educ. Bull. No. 13, 1914. 264-268.

In the California intermediate schools the study of Latin seems to be very successful. The text-books in common usage are a Latin primer and a Latin first-reader, written by Professor H. C. Nutting, of the University of California, and designed especially for the intermediate school. About a year and a half is devoted to the primer and a half-year to the reader. In the ninth year Caesar is commonly read. Very little work is done outside of the class in the seventh year, but the amount is gradually increased during the next two years. Much work is done in concert; blackboard vocabularies are stressed; drills are frequently given, and the oral translation of English into Latin is emphasized. Interest is appealed to by employing the class in some activity demanding the use of Latin. The opinion among the Latin teachers was that "at that age they [the pupils] memorize very readily, but unless there is much, very much repetition, what has been so quickly learned is quickly lost. They are free from self-consciousness, and are full of eager interest in their work. On the other hand, the reasoning powers are not so fully developed, and grammatical constructions must be presented very simply and very slowly to be understood." Pupils who had had the intermediate-school training were better prepared for the more advanced Latin than those who had studied one year of Latin in the ninth grade.*

Hygiene. Relatively little junior-high-school literature deals with physiology, hygiene, or physical training; and only in a few curricula is health given a place equal in importance to other subjects. It has been conceded that the teaching of physiology in the past has been almost a failure, probably because instruction has been negative rather than positive and because time has been spent on anatomy and physiology rather than habit-formation. At present, however, there is not the concerted effort to work out courses in hygiene as in the other school subjects.

Burnham holds the fundamental aim in teaching hygiene should be the inculcation of habits necessary for health. Knowl-

*Nutting, H. C. Latin in the seventh and eighth grades in California. *Classical Weekly*, 7: 1914, 154-157.

Deutsch, M. E. Latin instruction in California intermediate schools. *Classical Weekly*, 8: 1915, 122-125.

edge of laws of health, anatomy, and physical development are necessary as they aid in forming these habits of useful activity, but actual training in hygiene is the essential thing. Storey believes that in the grades emphasis should be placed upon physical exercises, bathing, tooth-brush drills, the part the child plays in medical and physical examinations, school sanitation, etc., as procedures tending to develop habits of hygienic living. He would correlate this work closely with the advancing grades and vary it as needed with regard to content, presenting enough physiology and anatomy to insure an intelligent knowledge of hygiene.³⁷ Burnham outlines a course for teachers, in order that such a program may be carried out. The chief topics in his outline are: Personal hygiene, contributing to the efficiency of the teacher as a worker; public hygiene, furnishing a means of showing the conditions that favor the welfare of society; hygiene of the child, imparting a knowledge of the character of the child's body and the laws of its growth; school hygiene, dealing with the conditions of the school room and the sanitation of the school surroundings; mental hygiene and hygiene of instruction, furnishing a basis for method in instruction.³⁸

Commercial Subjects. Less unanimity exists in the discussions of the commercial subjects than in the treatment of the so-called academic subjects. Some would exclude entirely from the seventh and eighth grades such subjects as stenography and type-writing, because they possess relatively little educational value; others assert they have proved their educational worth, and are entitled to their place. Some formulate the ends of the commercial curriculum in terms of the English, arithmetic, etc., that the business man would expect of the eighth-grader if he were to leave school and go to work; others, while they would teach practically every subject in the commercial curriculum from the standpoint of business, would put educational values foremost; and still others would use the commercial courses as a field wherein the pupil might gain prevocational insight. On the whole, there seems to be

³⁷Storey, T. A. Teaching of hygiene. *Monroe's Cyc. of Educ.*, pp. 357-360. Personal hygiene, pp. 354-355. School hygiene, pp. 355-357.

³⁸Burnham, W. H. Hygiene. *Monroe's Cyc. of Educ.*, pp. 353-4.

a pronounced tendency to make the commercial curriculum primarily vocational first, and secondarily prevocational or educative. In discussing this curriculum, as in the manual arts, it is frequently pointed out that one aim should be to give a certain amount of training to those pupils who will be forced to leave school at an early age. On the other hand, it is objected that this class of pupils cannot well be selected and segregated. Moreover, all the courses in the program should be as nearly equal in educational value as possible, for, if the vocational aspect is emphasized, pupils will be unable to transfer to another curriculum without the loss of time. Again, it is objected that the commercial curriculum is necessarily narrower than one including manual arts, academic subjects, and commerce. The answer is that this may be remedied by allowing commercial pupils the privilege of election from manual arts and academic subjects.

Home Economics. Since practically all girls are potential home-makers, "it is the purpose of this group of courses offered under household arts not only to prepare girls to become better home-makers, but also to make them more intelligent concerning those occupations which were formerly a part of every home but have recently been taken from the home, and to give them an appreciation of the factors that make up the municipal environment, and of the influence of these on the home."³⁹ The courses themselves fall into three groups: sewing, cooking, and home-planning and decoration. While considerable skill should be gained in actual manipulative processes, still the work should be directed to the broader, more educational end. Outlines of courses in sewing usually begin with simpler processes, as the making of stitches and simple pieces of clothing, and proceed to machine work, study of textiles, history and economic value of textiles, the relation of clothing to income, care and hygiene of clothing, beauty and becomingness of clothing, and the like. In the same way, courses in foods begin by the preparation of standard dishes, but proceed to balanced meals, foods for children or invalids, economic value of foods, chemistry of foods, and perhaps the hygiene of digestion. In both courses, stress is placed upon practical work and the rela-

³⁹U. S. Bur. of Educ. Bull. No. 41, 1913, p. 58.

tion of income to the amount expended for clothing and food; and upon actual rather than 'black-board' buying. Occasionally, in connection with these courses reference is made to the care of children, and still less occasionally to the more direct phases of motherhood. Courses in home-planning and decorating are not so well worked out.

Industrial Arts. All agree that, beginning with the seventh school year, vocational guidance must be given to most, if not to all pupils. Much work has been done, and methods are crystallizing for the promotion of prevocational education, as distinct from trade training.

Studies show that the average twelve-year-old pupil has very incomplete ideas of his future, as well as a very inaccurate conception of the different industrial fields. If he has made any choice as to his future occupation, it is usually because of association, imitation of a friend, or a desire to emulate an adult whom he admires.⁴⁰ Even at the age of fifteen or sixteen only about half have selected a vocation, while of those who have done so, few are able to give intelligent reasons for their choice and still fewer have correct conceptions of the occupations they have selected. However, the interest in surrounding activities, blended with the more or less vague conviction that an occupation must sometime be chosen, is an aid in vocational guidance. Student questionnaires and other such devices help in bringing the pupil to consider his future. Natural ability shown in different lines of school work is taken as a primary consideration in giving vocational guidance.

The Committee on the Economy of Time in Education has outlined vocational education for the schools in a broad way⁴¹ and many of its suggestions have been more or less deliberately followed by many school superintendents. The plan is: At the end of the six-year elementary school there should be provided "lower" vocational institutions, which begin training that will not develop productiveness or specialization in a narrower sense, but that will

⁴⁰Bloomfield, M. (Editor). *Readings in vocational guidance*. 1915, 723 pp. Contains many studies along this line.

⁴¹*U. S. Bur. of Educ. Bull. No. 38*, 1913. p. 32.

give a vocational training standing in the same relation to later specialization or apprenticeship as the tools of learning acquired in the first six grades do to the later high-school or college years. Beginning with the senior high school, or at about the fifteenth year, a somewhat more specialized training dealing especially with those occupations midway between the trades and professions should be given. The graduates of these schools are not yet finished workmen or tradesmen, but continue through the university; or if they should stop school at this point, they would enter upon a new, shortened, and school-supervised apprenticeship. The argument for a school-supervised apprenticeship is that proper training will not be given by a manufacturing plant, trade union, or a foreman, who cares nothing for the development of the young apprentice.

The inference may be drawn that the general theory held by those outlining junior-high-school work is in the main as follows: Pupils in the seventh and eighth grades should pursue the fundamental branches as the chief divisions of the curriculum in classes where but little differentiation is made with reference to the particular vocational courses, but where class work is vitalized through industrial work as well as other social applications. In addition to its educational aim, the vocational course should aim to determine the pupil's natural aptitude in some particular line and to discover any pronounced lack of ability. Any curriculum must be elastic enough to allow changes from one line to another, without the loss of time, until the best possible opportunity for success is discovered. As a consequence, the prevocational lines now being formulated are: the academic, offering languages; the commercial, offering the beginnings of a business education; and the industrial, which usually consists of wood and metal work, agriculture and domestic science. The academic and commercial are usually more general than the industrial curricula, since the latter are built more directly upon the occupations of local communities.

Several other well-marked tendencies of vocational education in the present-day reorganization are to be noted. One is the disposition to make provision for a class of pupils who intend to end

their schooling with approximately the eighth year, and who desire to secure training that will fit them for productive work. Courses, usually two years in length and designed to give a rather specific vocational training, are offered for these pupils. In some instances this is reinforced by a "part-time" or a "follow-up" system.

A second tendency is to vitalize the different courses and at the same time make them prevocational by correlating them with the social and industrial activities of the community.⁴² Principal J. B. Davis of Grand Rapids, Michigan, has evolved a plan of vocational guidance which is in operation in his school, and variations of which are found in a number of places. It is carried on through the English courses. Beginning with the seventh grade, studies are made of the occupations. For this work, trips are taken to different industrial establishments, books and magazines are supplied, and the pupil is encouraged to find from any source whatever he can about the vocation he is studying. An attempt is made also to lead the pupil to consider his own fitness for a calling, while data taken by the vocational adviser help him to understand the child's inclinations. The procedure is made more definite with the succeeding grades, and the discovered aptitudes are taken into consideration to some extent in assigning individual work in the other classes.⁴³

There is also a tendency to carry the prevocational lines of the earlier grades into the senior high school where they are to be differentiated further, made more specific, and articulated directly with the industries and the professions, as the college-preparatory course has been articulated with the colleges in the past. This conception leaves out the "school-supervised apprenticeship" recommended by the Committee on the Economy of Time; it makes the senior high school more vocational than it would be otherwise; and it makes necessary at least a selection of a general type of vocation at the end of the ninth school year.

⁴²See Dewey, J., and Dewey, E. *Schools of tomorrow*. 1915, 316 pp. Taylor, J. S. Report on Gary schools. *Educ. Rev.*, 49: 1915. 510-526.

⁴³Davis, J. B. *Vocational and moral guidance*. 1914. 303 pp.

In a questionnaire study of manual and household arts in the elementary and secondary schools of 156 cities, including 39 states, Park and Harlan found one-half reported the prevocational aim as dominant in their teaching. They also found a wide range of variation in the kinds and the grade-location of the work offered. The central tendencies show one period a week of 70 to 90 minutes in the grade and 5 periods of about 75 minutes in the high schools. They found about 5 per cent of the total school time utilized in the first 6 grades, about 6 per cent in the seventh and eighth, and nearly 25 per cent in the high school. They found a further tendency to adapt methods to the age and grade. Seventeen per cent used systematic graded exercises, individual projects by the pupils, co-operative projects selected by the group, and projects expressive of some phase of work in arithmetic, history, literature or other subjects. Other combinations were used frequently, but the combination of systematic graded exercises with individual projects was used in 23 per cent of the cases. They found a strong tendency towards individual work, since 40 per cent of the cities allow the pupils to keep the products of their handiwork. The tendency to dispose of such products by sale was almost negligible.⁴⁴

A number of recent studies have been undertaken to determine the extent and scope of manual and domestic arts. Bennett's questionnaire sent to 196 school systems showed 24 giving 2.5 or more hours to manual arts in the seventh grade; 45 cities, 2.5 or more hours in the eighth; 46 cities, 5 or more hours in the ninth. Of 1,336 smaller cities, 753 report courses in industrial arts. The Reading survey of 147 cities showed 42 different industrial-arts subjects given in the seventh grade. Elementary bench work, 100 schools; sewing, 81; cooking, 71; mechanical drawing, 53, were most frequently given. About the same situation was found in the eighth grade.

EXISTING JUNIOR-HIGH-SCHOOL CURRICULA

The following tables and charts summarize the curricula found in actual operation in 75 seventh and eighth grades, and in 31 ninth

⁴⁴Park, J. C., and Harlan, C. L. Teaching of manual arts and home making in 156 cities in the United States. *Educ. Ad. and Super.*, 1: 1915, 677-678.

grades. All of these schools begin their junior division with the seventh grade. In a few cases a ninth grade was included when it did not form a part of the junior high school. This method of tabulation perhaps gives a better representation of present work than if schools were included regardless of grade grouping. It is probable, however, that the 31 ninth-grade curricula contain a greater proportion of the more progressive cities, and that, as a consequence, the ninth grades appear better than they would otherwise. In instances where two or more curricula are found in one school, subjects—as English, for example—occurring in each of the curricula were taken as required.

TABLE 6

CITIES WHOSE SEVENTH, EIGHTH, AND NINTH-GRADE CURRICULA ARE INCLUDED IN THIS SUMMARY

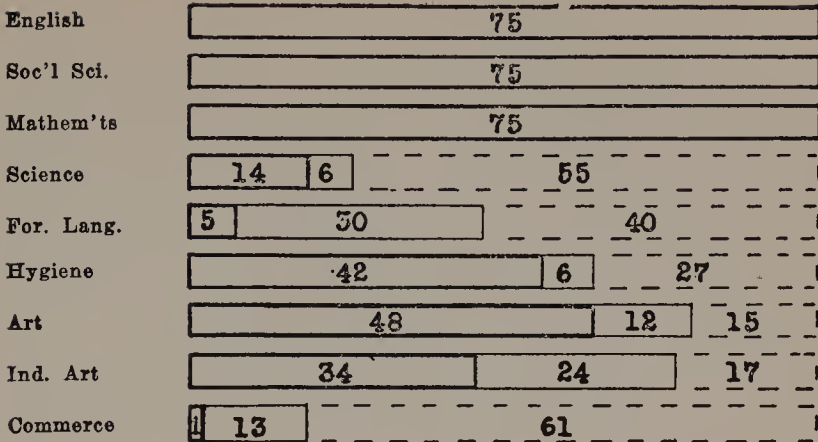
Berkeley, Cal.	Chanute, Kan.	Santa Fe, N. M.
Los Angeles	Hays	Trenton, N. J.
Oakland	Neodesha	Horace Mann, (N. Y.)
Santa Rosa	Adrian, Mich.	Columbus, O.
Norwalk, Conn.	Grand Rapids	Muskogee, Ok.
Quincy, Ill.	Lowell	Salem, Ore.
Springfield	Cokato, Minn.	Curwensville, Pa.
East Chicago, Ind.	Crookston	Murray, Utah.
Seymour	Duluth	Salt Lake City
Goldfield, Ia.	Rochester	Bristol, Va.
	Wisconsin High School (Madison)	

CITIES WHOSE SEVENTH AND EIGHTH-GRADE CURRICULA ARE INCLUDED IN THIS SUMMARY

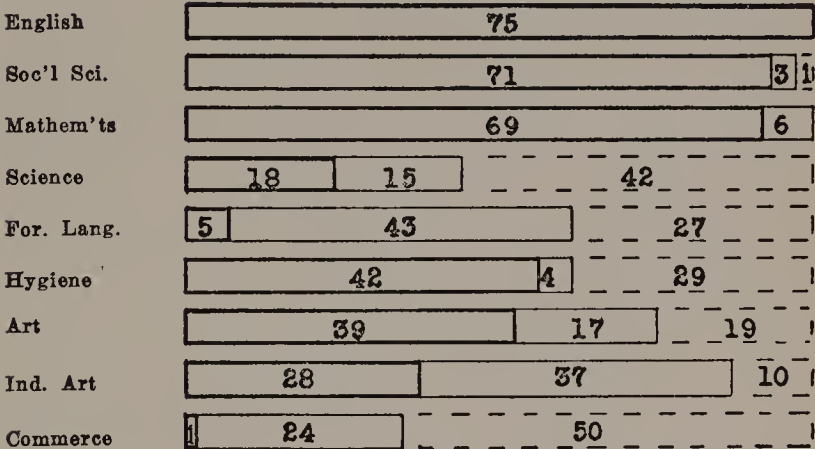
Fresno, Cal.	Ft. Scott, Kan.	Silver Creek, N. Y.
San Francisco	Girard	Solvay
Ft. Morgan, Col.	Manhattan	Bismark, N. D.
New Britain, Conn.	Madisonville, Ky.	Devil's Lake
Boise, Idaho.	Morganfield	Grafton
Lewiston	Paducah	Webster
Crawfordsville, Ind.	Arlington, Mass.	New Kensington, Pa.
Evansville	Dudley	Brookings, S. D.
Mt. Vernon	Kalamazoo, Mich.	Columbia, Tenn.
Richmond	Faribault, Minn.	San Antonio, Tex.
Denison, Ia.	Hutchinson	Ogden, Utah
Hampton	Lincoln, Neb.	Burlington, Vt.
Winfield	Brockport, N. Y.	Diamondville, Wyo.
Arkansas City, Kan.	Dansville	Laramie (U. of W.)
Great Bend	Scotia	

Tables 6 and 7 present a number of interesting points. A wide range of subjects is found, as well as a wide range of grouping of subject matter. In English, for example, some schools have courses well organized under the head of "English," with grammar, penmanship, spelling, etc., closely coördinated; others have courses appearing upon close examination to consist of reading or

Seventh Grade (75 Schools)



Eighth Grade (75 Schools)



Ninth Grade (31 Schools)

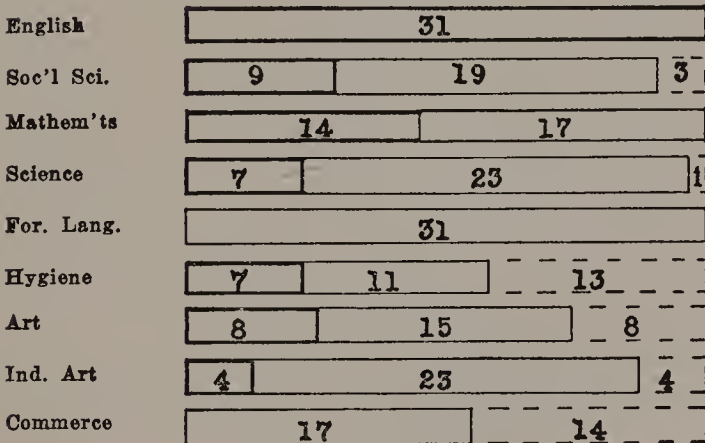


CHART 1.

CHART 1. GRAPHIC REPRESENTATION OF THE DATA IN TABLE 7.

The heavy line denotes that the subject is required, the light line that it is elective, and the broken line that it is not given. The number of schools is indicated.

TABLE 7
EXISTING JUNIOR-HIGH-SCHOOL CURRICULA, SHOWING THE SUBJECTS OFFERED; AND THE NUMBER OF SCHOOLS OFFERING EACH SUBJECT

	ENGLISH										SOCIAL SCIENCES					MATH'S			SCIENCES					LANGUAGES				
	No. of Schools	English	Reading	Grammar	Spelling	Pennmanship	English (Gr. Sp. Pen.)	History	Civics	Hist. & Civ.	Geography	Hist. & Geog.	Hist., Civ., & Geog.	Civics & Geog.	Mathematics	Algebra	Arithmetic	General Science	Agriculture	Physiography	Biol. (Bot. & Zoo.)	Latin	German	Spanish	French	Swedish	Italian	
Seventh Grade Required	75	53	17	19	31	35	14	51	8	4	51	7	1	2	10	1	65	11	4	4	..	1	3	1	..	..	..
Elective	..	..	7	..	25	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	23	..	..	..	..
Eighth Grade Required	75	57	13	15	25	12	51	17	14	17	5	1	..	..	12	9	49	13	1	..	..	3	6	..	..	..	..
Elective	..	..	8	..	3	3	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..
Ninth Grade Required	81	31	..	..	..	..	4	3	1	1	..	..	..	..	4	9	4	10	7	4	..	27	39	8	9	..	..
Elective	..	..	2	..	3	7	16	1	1	1	..	..	..	..	3	12	2	12	1	5	3	26	26	5	..	..	..

TABLE 7—Continued

	HYGIENE			ART			INDUSTRIAL ARTS										COMMERCE										
	No. of Schools	Physiology	Hygiene	Physical Training	Fine Arts	Music	Drawing	Freehand Drawing	Industrial Arts	Manual Training	Survey of Vocations	Industrial Science	Industrial History	Printing	Metal Work	Domestic Science & Art	Interior Decoration	Dressmaking	Design	Mechanical Drawing	Typewriting	Com. or Ind. Geog.	Shorthand	Business Practice	Commercial English	Bookkeeping	Commercial Law
Seventh Grade Required	75	13	13	26	5	10	31	2	4	80	..	..	..	..	..	30	1	..	1	..	..	4	..	..	..	..	..
Elective	..	1	3	..	6	10	18	..	4	23	..	..	..	..	..	24	..	..	3	..	..	..	..	..	..	..	..
Eighth Grade Required	75	15	11	26	6	35	10	2	3	25	..	..	..	..	..	25	..	..	..	..	..	3	..	..	..	..	..
Elective	..	3	2	4	7	19	13	..	4	32	..	..	..	..	..	32	..	..	..	..	..	1	..	..	..	..	..
Ninth Grade Required	81	2	1	10	1	5	4	..	5	1	..	..	..	..	..	3	..	..	..	..	..	1	..	..	..	..	..
Elective	..	3	1	3	2	14	6	6	5	19	1	..	..	..	..	19	..	..	..	..	..	5	..	..	..	..	..

literature, two periods a week; grammar, two periods a week, and a period of penmanship and spelling—these sectionalized and presented in a wholly separated fashion. Others have made no attempt to unify English. The same may be said of the subjects grouped under the caption "Social Science," or "Mathematics." Among the foreign languages, German and Latin hold sway. In the seventh grade 35 of the 75 schools offer foreign language. Of these 35, one offers Latin alone; 15 offer German alone; and 6 offer both Latin and German, thus accounting for all but 13 of the schools. In the eighth grade of the 42 schools offering languages 4 offer only Latin; 3 give only German; and 18 permit a choice between the two.

In the seventh grade 34 schools offer no optional subjects; seven schools offer a choice between manual training or domestic science and a foreign language; and one offers domestic science or manual training as the only elective. In the eighth grade 25 schools offer no optional subject; 6 permit a choice between domestic science or manual training and a foreign language; 9 offer language as the only elective. In the ninth grade greater freedom of choice is given. Only one school offers no optional subject; three offer language alone; and one offers only a choice between language and manual training or domestic science.

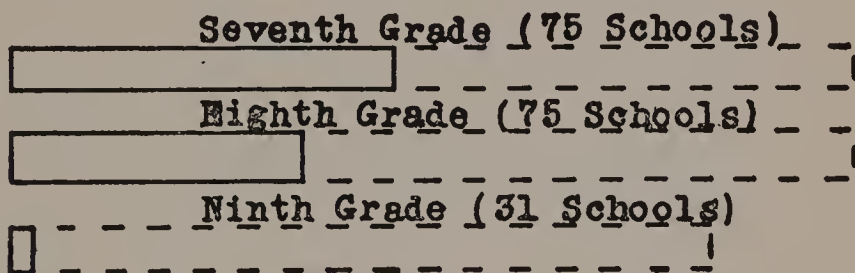


CHART 2

PROPORTION OF SCHOOLS OFFERING ELECTIVES (SOLID LINE) AND NOT OFFERING ELECTIVES (BROKEN LINE) IN THE 7TH, 8TH AND 9TH GRADES

According to these tables, the backbone of the curriculum for the first two junior-high-school years consists of English, social science, and mathematics. Real differentiation is not under way.

If the curricula from which the tables are compiled are representative, the average curriculum for the first year of the junior high school is: English (6 periods per week), with reading, writing, grammar, spelling and penmanship taught separately or in rather poor coördination under the general heading; social science (5), presented as history and geography; mathematics (5), meaning arithmetic; physiology and hygiene (3) or physical training (2); drawing (2) and perhaps music (2); manual training (2) or domestic science (2). For the second junior-high-school year the average curriculum is: English (5)—much the same as that in the first year; history (5) or civics (5); arithmetic (5); physiology and hygiene (3) or physical training (2); music (2) or drawing (2); and an option between Latin or German (5) and manual or domestic science (2).

Real differentiation is under way in the ninth grade. Here the only required subject is English, and options are allowed—under supervision—to the extent that the pupil practically selects his own work. He may choose among Latin and German, history, algebra, general sciences, music and drawing, manual or industrial arts and domestic science, and certain commercial subjects.

The greatest number of subjects is found in connection with industrial arts or prevocational work, and this number is increased by approximately 50 per cent when the commercial branches are added. This variation is to be expected when curriculum building is considered from the standpoint of community interest. The presence or absence of such subjects is, however, the only available index to what is being done in a school system with regard to vocational guidance, and thus considered, it is strikingly noticeable that a considerable percentage of the schools are making no provision whatever in this direction. Also, school reports and other literature show that these branches are taught with a variety of aims in view.

One question in our syllabus was: "Are your manual and household arts courses planned to help the student find his life's work, to fit for a trade, or for general educative value? Are these courses required?" Eighty-four replies are as follows: Eighteen plan their courses to "help the student find his life's work," 3 to

help find a life's work and to "fit for a trade," 17 to help find a life's work and for "general educative value," 31 for general educative value alone, while 15 have all these points more or less definitely in mind. "General educative value" to some superintendents might imply a certain amount of prevocational training, but in the light of the other points in the question it would seem that those who would "help the pupil find his life's work" as well as give him "general educative value" may be more properly credited with this latter conception. Of 73 replies, 31 require manual and domestic arts; 37 allow the pupil to choose, and 5 require one or two years of this work (See Appendix, Section 3).

Types of curricula. The different subjects and courses are grouped into curricula that vary from a curriculum representing a formalistic presentation of the old subject matter of the grammar school to a curriculum really made up of several different curricula in which subjects and courses are differentiated for groups of pupils. A classification is unsatisfactory on account of overlapping, but several types seem to be more general (For examples of these types see Appendix, Section 2).

1. One type is made up of the common branches with no elections until the ninth year, when a choice may be made among languages, industrial arts, and perhaps science. This type often contains no manual or domestic-arts courses.

2. A second curriculum is essentially the same as the first, save that manual training and domestic science are found throughout. Language may usually be begun in the eighth grade. Here also are feeble beginnings at a systematization of subject matter.

3. A third type consists mainly of the common branches, with languages, manual training or industrial arts and domestic arts, science, and commerce, but the subject matter is being subjugated to an overhauling, condensation and elimination of non-essentials, and is being correlated with the elementary school from below and with the senior high school from above. In varying degrees, also, subject matter is being given its social and economic setting. A few elections are given the first year; more opportunity for choice is given the second, while in the third year English is

about the only required subject. Under this general heading several sub-types are found:

(a) A general curriculum, in which the pupil elects such subjects as are not required of all. Sometimes statements are made to the effect that the pupil, the pupil's parents, and the principal or teachers coöperate in determining elections; frequently no such statement is made. Here elections seem to carry no further than the semester or year. This is a very common type.

It would seem that this plan offers a wide range for individual development through its adaptability to individual differences, and certainly an ample chance for adjustment in case of a wrong choice. On the other hand, it might be objected that it does not make adequate provision for continuity of effort.

(b) Another type combines the general-curriculum with the separate-curriculum plan. Except for more or less elective privileges in the seventh and eighth grades, work is the same for all; with the ninth grade, distinct curricula are provided, and these are carried into the senior high school. This seems to be a rudiment of the eight-four plan where differentiated work was provided beginning with the high school. It assumes that the ninth-grader has reached a place where he can choose more specialized work, and it aids him in his decision through elections during the two preceding years.

(c) A common type is divided into two or more curricula, such as the "regular academic," the "industrial," and the "commercial." Here subjects like English, arithmetic and history, are the same for all pupils, and the curriculum is often named from one or two subjects that differ from the common stock. The main difference between this and Type *a* seems to be that the pupil decides at the beginning what work he is to pursue for three years.

Without doubt this plan tends to reduce to a minimum the disadvantages of the elective system. It must assume, however, that no mistake has been made in selecting the courses to form a definite curriculum and that the pupil has chosen correctly. Sometimes provision is made for transfer, if it is shown that the pupil is clearly unfitted for the work he has chosen, but more often the pupil is given to understand that after the first year it will be

difficult for him to change. Rarely are electives provided within the curriculum. Lack of flexibility at the time when ability should be tested in a number of fields seems to be the greatest fault of this type.

(d) Another type is divided into two-year "cycles." To some extent options are given at the beginning of the seventh year, but the selection at this stage carries with it certain subjects or courses and perhaps another cycle as well. At the beginning of the ninth grade a second and even more important selection is demanded.

This method aims at giving the benefit of the elective system and at the same time to insure that continuity of effort which may be lacking in a curriculum consisting largely of free electives. Since a cycle contains a group of subjects, there should also be a closer coördination of work. The work is, however, relatively unchangeable for two years.

4. Another type provides several different curricula, in which subjects and courses are widely differentiated. Thus, English or arithmetic, varying but little from the traditional course, is provided for pupils who expect to complete the high school and to enter college; commercial or industrial English or arithmetic for pupils whose aptitudes seem to be for this kind of work or whose vocational destinations will probably be the commercial or industrial world. This scheme involves also segregation as to sex. The sexes may be handled together in certain "cultural" subjects, while in the industrial subjects they receive separate instruction. In accordance with this view, there is no call for segregation in the "academic" curriculum and but little reason for segregation in the "commercial" curriculum, excepting when these pupils take manual training, domestic science, physiology and physical training. However, the sexes are kept separate to the degree that science, history, mathematics and the like will differ when founded upon home-making on the one hand and upon industrial arts on the other. Others believe that segregation possesses value in itself.

This plan has been objected to on the ground that it provides a narrow training. A curriculum based entirely upon commercial

or industrial branches, it is said, can hardly have the breadth of one including these subjects as electives. Moreover, pupils in these different lines of work are liable not to acquire a sufficient amount of the knowledge that ought to be common to all. The plan is defended on the ground that it provides the best possible means for individual differences and that knowledge really essential may be presented just as easily in a commercial or industrial setting.

5. Whatever may be the general plan adopted, a number of superintendents are providing two- or three-year curricula for pupils who expect to leave school at the end of the eighth or ninth school-year, and who, as a consequence, desire training productive of immediate financial returns. This training is for the most part along commercial, industrial and home-making lines, and these lines are closely articulated with commerce, the industries and the home. It is realized that difficulty will arise in the planning of other work should a pupil desire to remain in school at the end of this time, and some are taking steps to remedy this trouble.

6. Gary has often been said to possess a junior high school, not because of outward features of organization, but because of the educational principles upon which the system is founded. To Taylor, it is the most significant educational experiment since Pestalozzi; to Snedden, its plan of practical instruction is better "than anything heretofore existing outside of individual schools;" to Burris, it is the "best yet devised." The community idea and the social working groups of pupils are to Dewey the "biggest idea." The maximal use of the school plant, play activities, duplicate school system, have been widely studied and imitated. The copious literature on Gary is for the most part highly laudatory.

7. In the course of the junior-high-school reorganization into prevocational departments, fragments have split off—the industrial arts department withdrawing to form a separate elementary industrial or prevocational school. But, though narrowed to the industries, these schools still possess striking vocational guidance functions. In some localities schools are provided for 'motor-minded' students; in others, all students are given this work

Leavitt and Brown in their recent book⁴⁵ are concerned chiefly with schools for the type of pupil that does not succeed in the traditional work, although they do not seem convinced that all pupils could not pursue more vocational work with profit.

One of the most consistent attempts to develop this type of school is the Ettinger prevocational experiment in New York. Under the Ettinger plan, children at the beginning of the seventh grade, having chosen between regular academic and industrial work, are divided into sections for wood-work, machine-making, millinery, pasting novelty work, power-machine operating, etc. The admitted purpose is vocational guidance, by "rotating industrial classes," with nine weeks in each shop, then shifting, until marked aptitude is shown; marked deficiency, on the other hand, results in a return to academic work until the next shift.⁴⁶

Albany and Rochester have industrial courses for normal pupils. Rochester has three boys' industrial and girls' household-arts centers, with prevocational experiences in wood-work, metal work, masonry and industrial drawing, cooking, sewing, applied art and design. But the Cleveland elementary industrial school, for example, is limited to retarded children. This school develops a course of study parallel to grades seven and eight, devoting half-time to practical arts, and reducing the amount of allotted book subjects two-fifths. Vocational guidance is secured through the general course in which the boys work before specializing definitely for the major art of the second year. In Indianapolis, while semi-industrial schools parallel grades seven and eight, the new course has also been placed in some elementary schools, with freedom of transfer, for all seventh and eighth-grade children. The range of prevocational experiences here includes "carpentry, joinery, repair work, art metal-work, printing and book-binding, sewing, dress-making, art needle-work, weaving, cooking and housekeeping."

⁴⁵Leavitt, F. M., and Brown, E. *Prevocational education in the public schools*. 1915, 245 pp.

⁴⁶Ettinger, W. L. A report on the organization and extension of prevocational training in elementary schools. Dept. of Educ., New York City. 1915, 80 pp.

Weet, H. S. A first step in establishing the six-three-three plan. *N. E. A. Bull.* No. 6, 4: 1916, 146-152. Published also in *Educ. Ad. and Super.*, 2: 1916, 433-447.

CHAPTER IV

PROBLEMS OF ADMINISTRATION AND SUPERVISION IN THE JUNIOR HIGH SCHOOL

THE GROUPING OF GRADES

The present grouping of grades is first of all dependent upon local conditions, particularly upon building facilities. Outside of a few schools that have been governed largely by the previous arrangement of grade, there seems to be a consensus of opinion that the seventh grade is the place to begin the junior high school. A large majority of the school systems in which the junior high school has been established use either a six-two-four, a six-six, a six-three-three or six-four-two grouping (see Table 8).

TABLE 8

THE PRESENT GROUPING OF JUNIOR-HIGH-SCHOOL GRADES IN 184 SCHOOL SYSTEMS

Grades	5-7	5-8	6-7	6-8	7-8	7-9	6-6	8	9	8-9	7-10
Number of Systems	1	1	1	11	77	64	10	3	1	8	7

Of 22 additional schools that will reorganize later, 16 expect to include grades 7-9 in the junior high school. A few New England schools having nine grades plus a four years' high school are arranging to eliminate one year. On the other hand, a few cities in the south, where the seven-year elementary school is common, report that they have formulated a system calling for six years' elementary and six years' high-school work.

The six-two-four method seems to be an outgrowth of the eight-grade grammar school and is found very often, though not always, in the same building with the first six grades. Its frequency may be partially explained by the lack of organization and correlation of subject-matter, since a number of superintendents who use this plan are expecting to add the ninth grade as well. In this case it may be looked upon rather as a stage of development,

although it is probable, even with this conception, that the seventh and eighth grades will comprise the junior-high-school unit in some cities for some time to come. On the other hand, if differentiation of courses should come with the ninth grade, as it now does in some schools, or if the ninth grade should be regarded as the proper time to end general education and to begin closer specialization in ordinary school work or in trade training, the result might well be a junior high school composed of grades seven and eight.

Snedden's view seems to be somewhat of this nature, although he believes in optional subjects beginning with the seventh grade. At the Detroit meeting of the N. E. A. he advocated electives for children from twelve to *fourteen* years of age—which undoubtedly means he believes that a different kind of education should be provided for these children, and also apparently that general education is to stop with the eighth grade.¹ Snedden's well-known views upon vocational training further confirm this interpretation of his views.

Small school systems with an insufficient number of pupils to warrant a junior, as distinct from a senior high school are frequently organized on the six-six basis, or, if they have the six-three-three or six-two-four organization, the difference is usually so slight that it amounts to the same thing. However, Grand Rapids, Mich., is a notable example of a large city preferring the six-six type. In this type some see peculiar advantages, especially the separation of the twelve years into six years of elementary and six years of secondary work. Also, it probably reduces to the minimum the chance of a 'gap' arising between the junior and senior schools, as in the past between the eighth and ninth grades, since there will be a closer coördination of subject matter and at no time will a pupil feel that he has completed a definite division of the school.

A division consisting of the seventh, eighth, and ninth grades has perhaps more advocates than any other. These three grades, it is said, "belong together" for psychological reasons, for the average child enters the seventh grade at the beginning of the

¹Snedden, D. The character and extent of desirable flexibility as to courses of instruction and training for youths of from 12 to 14 years of age. *Educ. Ad. and Super.*, 2: 1916, 219-234.

adolescent period and emerges from the ninth grade with the period of transition completed. Hence, such an arrangement permits the handling of a group of pupils psychologically similar, who form a homogeneous social group. Also, this plan should aid in retaining pupils in school, for it will tide them over the critical period when the compulsory attendance law permits them to withdraw.

In a few sections of the country the conviction is growing that grades seven to ten should constitute the unit. Here the idea is to make the period of "general education" extend through the tenth school year, while with the eleventh, real secondary training, more specialized in nature, begins. This view distinctly holds that four years is necessary for general education, and perhaps implies but little less distinctly that the eleventh and twelfth years of the high school and the first two years of college will be embodied within the period of "secondary education." Merrill, for example, argues for such a division, and points out that the place where stress is rightly shifted from the individual to subject matter constitutes the place to separate "intermediate" from high-school instruction. Such a place, in his opinion, lies at the end of the tenth school year.² Again, Miss T. M. Otto, in considering this question from the standpoint of girls, asks for a period of four years to give the girl a thorough general training. She also says:

Many leading educators are agreed upon the need of a unified period of four years following the sixth grade—a period which should be organized solely for the best interests of the pupil. James P. Haney, Director of Art, High Schools, New York City, insists that this new type of education should consider not only the so-called 'waste years,' between 14 and 16 years of age, but should cover a period of four years. Arthur D. Dean, Chief Division of Trades Schools, New York, also advocates a four-year period as the length of time after the sixth grade necessary to produce the requisite mental and physical training for a life of efficiency, and as necessary to attract and hold the pupil from 14 to 16 years of age, when growing power is greatest and earning power is least. Dr. Balliet favors a type of 'Intermediate industrial school' covering in point of time, the first two

²Merrill, G. A. The province of the intermediate school, the province of the high school, and where to draw the line between them. *Proc. Cal. Teach. Assn.*, Berkeley, 1914, 9-16.

years of the elementary course and the first two years of the high-school course.³

A division ending with the eighth, the ninth, or the tenth school year presents another point for consideration. A course of study at the beginning of the senior high school would probably differ from the same course as marking the end of a more or less definite eyele of work, even in those schools where it is hoped the line of demareation between the junior and senior schools will be little noticed. If it is probable that the compulsory age limit will be pushed upward to the age of sixteen, and if it is true that an increasingly large number of pupils will remain in school until this age, whatever the compulsory age limit, we have additional reasons for a period ending with the tenth school year.

THE 'REGIONAL' SCHOOL

In the recent survey of education in Vermont, the commission advised the smaller high schools, which maintain a four-year high school eurrieculum with great difficulty and expense, to give up the last two years and consolidate the seventh and eighth grades and the first two years of the high school "into a compact, closely articulated school unit, to be known possibly, as a junior or intermediate high school." A central school could then be organized in a sufficiently large district, open to, and designed for, the needs of the entire district. Its eurrieculum up through the junior school would be adapted to the needs of the immediate locality, while the same would be true of other schools in the district. This "course [in the junior high school] should represent aequirement and training of recognized value to such pupils as may receive no further education. Moreover, this value must be such as can be appreciated by the average parent, and to no slight degree by the pupil himself. Seecund, the eurrieculum should be based predominantly upon the environment and find its points of departure and return in the community activities and needs. Third, the course must fit

³Otto, T. M. Making over the middle years of our school system to meet the needs of girls. Paper read before the high school section of the Cal. Teach. Assn., Dec. 27, 1911. 11 pp.

in with the central school, through which the avenue to higher education must be kept open.”⁴

Judging from indications, it seems that a plan of this sort may be followed by localities in other states.

HOUSING

Existing building conditions are the prime determiner of the housing of the junior high school; and the same factor often determines whether or not the junior high school has its own principal. Of 178 schools, 45 are housed alone, 59 with the senior high school, 63 with the elementary grades, 2 in annexes to the senior high school, and in 9 systems some of the junior high schools are housed alone and the remainder with other grades. Of 172 junior high schools, 88 have their own principal, whether they are alone or with other grades, 81 do not have their own principal, and three are administered by an assistant who is under a principal of high schools. Nine of 11 additional schools that are to be reorganized will be separate and will have their own principal.

Many of the larger cities prefer a separate building⁵—a plan that facilitates administration and organization of junior social activities, and gives advantages in providing shops and laboratories. Smaller cities are not making the effort to provide separate quarters for this division of the system.

Oakland, Cal., has one district junior high school, and another school that has grades six to ten, inclusive. Besides these, there are four large elementary schools in which the work of the seventh and eighth grades is organized on the junior plan. The latter schools have given such satisfaction thus far that the intention now is gradually to reorganize all the larger elementary schools on this plan. Evansville, Ind., has the last six grades in one large plant, and this arrangement has proved advantageous. It allows one teacher to work in any of the grades and it reduces the feeling on the part of the pupils that there is any real division between the junior and the senior school. Rochester, Minn., is an example of

⁴Learned, W. S. The secondary schools. In *A study of Education in Vermont*. Carnegie Foundation, 1913, 61-110; p. 100.

⁵See Proc. N. E. A., 1914, 276-277.

this same grouping, but the superintendent there is convinced that the plan would work out more successfully if the two schools were separated.

COLLEGIATE INSTITUTIONS AND THE JUNIOR HIGH SCHOOL

One question in our syllabus was devised to find out whether in the opinion of superintendents the institutions of higher learning favored the junior-high-school organization. Only about 40 per cent answered this question. Of a total of 60 replies, 22 give an affirmative, or say that as far as they have learned, these institutions are favorable; four say that some of the colleges are favorable and some are not; three that the professors of education favor it; and 22 say either that they do not know or that no opinion has been expressed. Thirty-five replies to letters addressed to normal schools and to professors of education in colleges and universities in the states where the junior high school has obtained the firmest foothold seem to show that the average normal school or college is watching the development with interest but that no close relation exists between the public-school men and the departments of education of the collegiate institutions. Several colleges anticipate a demand from the secondary schools for teacher-training facilities and for advanced credit due to the economy-of-time feature, and say that they stand ready to meet these demands when they arise. Columbia, Harvard and Pittsburg universities are offering special work on the junior high school; Chicago, Michigan, Illinois, and Wisconsin Universities in the Middle West, and Leland Stanford and the University of California in the West, are leaders in the junior-high-school movement, but outside of a relative few the colleges and universities are following, not leading the developments. State departments of education show the same tendency. New Jersey, New Hampshire, California, Wisconsin, Tennessee, and New York have given encouragement and advice from the beginning; others have begun to study the junior high school since they have seen it taking hold in their public schools, while others have been ignorant of the fact that several schools in their state had already been reorganized. Some state departments have not

pushed the junior high school because of some other scheme of organization which they thought better suited to the schools of their state.

PARENTS, TEACHERS AND PUPILS

Superintendents are practically unanimous in declaring that the junior high school has increased the interest of pupils, teachers and patrons. To further this interest, parent-teacher associations are being formed in many places. Several superintendents have used the questionnaire method to find how the patrons and pupils regard the junior high school.

THE JUNIOR COLLEGE⁶

Already the junior college seems to be in a stage of development parallel to that of the junior high school only a few years ago. The following cities have either adopted the junior college or have it under consideration. No attempt has been made to collect names of cities outside of those to which the junior-high-school questionnaire was sent:

TABLE 9

PROGRESS OF THE JUNIOR COLLEGE MOVEMENT

Cities having Junior Colleges:

Anaheim, Cal., 2 yrs.	Evansville, Ind., 2 yrs.
Fresno, Cal., 2 yrs.	Grand Rapids, Mich., 2 yrs.
Los Angeles, 2 yrs.	Muskogee, Okla., 1 yr.
Aurora, Ill., 1 yr.	Columbia, Tenn., 1 yr.
East Chicago, Ind., 1 yr.	

Considering the Junior College:

Quincy, Ill.	Paducah, Ky.
Crawfordsville, Ind.	Dudley, Mass.
Evansville, Ind.	Austin, Minn.
Gas City, Ind.	Devil's Lake, N. D.
Goldfield, Ia.	Curwensville, Pa.
Radcliffe, Ia.	North Troy, Vt.
Neodesha, Kan.	Kemmerer, Wyo.
Winfield, Kan.	

Bingaman, in a recent report, gives additional information regarding the extent of the junior college. In operation: Auburn, Bakersfield, Fullerton, Long Beach, Santa Monica, Cal.; Rochester, Minn.; Hannibal, Mo.; Dansville, N. Y.; Lake View, Ore.; Sumner, Wash. Expect to organize later: Dundee, Ill.; Muncie, West Lafayette, Ind.; Fredonia, Kan.; Barnesville,

⁶A number of references to the junior college will be found in the bibliography.

Fergus Falls, Mankato, Montevideo, Minn.; Cando, Grafton, La Mounre, Williston, N. D.; Dayton, O.; Medford, The Dalles, Ore.; Johnstown, New Kensington, Pa.; San Antonio, Tex.; Rawlins, Wyo. (Bingaman, C. C. A report on the intermediate or junior high schools of the United States. Goldfield, Ia., 1916. p. 63.)

It has been advocated at La Crosse, and will probably be put in operation when the colleges and universities give credit for work done. Detroit would have one, if it were not against the law. Bismark is arranging to offer the first year. Worcester, Chanute, Kan., Trenton, Faribault, Minn., and Fort Morgan, Colo., reply "not at present," and Concord is favorably disposed towards it. Sixty-two schools reply that they do not have the junior college and do not intend to establish it.

Leland Stanford and the University of California favor the junior college, and are recognizing the work done in the junior colleges in that state. Oklahoma University makes a like provision for the work done in the Muskogee school system. At the University of Illinois, certain specifications are made with reference to students admitted to the junior college, qualifications of instructors and their teaching schedule, organization of courses, and equipment. In places where these qualifications are "approximately met, substantially hour-for-hour credit will be given at the time of the student's admission to the university, provided the maximum credit allowed shall not exceed 18 hours per semester." Partial credit will be given if the requirements are partially met. In 1915, three high schools in Illinois—the Crane Technical High School of Chicago, the Lane Technical High School of Chicago, and Township High School at Joliet—had incorporated the first two college years and had approved and accepted the above standards and regulations.

As indicated by this investigation, the main difficulty with the junior college seems to be a tendency to offer only an additional two years of work similar to the academic course of the high schools. This will be of value to a certain class, but other classes of students need work more vocational in nature which will be more difficult to provide. According to indications, also, junior colleges will be established in places of lesser resources and school

population where an inferior quality of work will be done. This tendency, however, the entrance requirements of the colleges and universities may tend to correct.

THE SECURING OF TEACHERS

A problem of the greatest importance lies in securing teachers for the junior high school. As organization is completed and a demand for a definite type and preparation is made, the peculiar difficulty besetting the junior high school will doubtless tend to disappear. A type of teacher is needed that has some knowledge of child and of adolescent psychology, and that appreciates the true pedagogical value of subject matter—in other words, a teacher that has the “junior high school idea.”

Today, superintendents are favoring teachers who have had a normal-school training, rounded out, if possible, by one or two years of collegiate work. Such a teacher seems to have a better conception of the stage of the child's life in which he enters the junior high school, the development these years gave him, and what it means to a pupil when he stops school or enters the senior high school. The present body of junior-high-school teachers is made up of elementary teachers who have been thought qualified for this work, and of high-school teachers—usually those who have been engaged in the first two years of high-school work—who have had experience in the grades and therefore appreciate the problems of the junior high school. Vigorous objections are made to teachers whose experience has been confined to the high school alone, and yet more vigorous objections to inexperienced college graduates. These two classes seem unable to adapt themselves to the junior high school. Their professional training is often of an inadequate, non-functioning variety, and they attempt to apply the method of instruction used in high schools or colleges to the immature students of the junior division of the school, not realizing, it seems, that subject matter must be worked over and fitted to the capacity of the pupils.

In order that unity in the school system be preserved, care is needed in defining the duties of the junior-high-school principal and his relation to other executive officers in the school system. In

the recent Cleveland survey, Judd shows that each of the junior high schools in that city has "two principals, one a man and the other a woman. In a general way, the functions of these officers are described by saying that the man is to have charge of the boys and the woman of the girls. It appears that neither one has responsibility over the course of study. The man makes the program and has supervision over certain types of work. Other subjects and teachers are assigned to the woman. This organization appears to be clumsy and expensive and to fail at the point where greatest supervisory activity is needed, namely, in arranging the details of the course of study."⁷

Some school boards have adopted a plan of making the junior principals, assistants to a principal of high schools. This, it would seem, should aid in bringing all the parts of the school into closer relation.

Superintendents who would reorganize their schools must first have a clear idea of what they intend to do, and then proceed to instill this idea into the minds of their teaching force and school patrons.⁸ But this is only preliminary, for buildings must be provided, courses and curricula worked out, and details of administration completed. Often it has been necessary to postpone reorganization for two or three years because of one or more of these considerations. Finally, it cannot be concluded from the literature they issue that the heads of school systems themselves always have the "junior high school idea;" but rather that many of them are following the example set by other cities, and are establishing junior high schools without giving sufficient consideration to the questions involved (see Appendix, Section 1).

SUPERVISED STUDY

The length of the school day, the length of the class period, and the amount of supervised study, are features wherein great

⁷Judd, C. H. *Measuring the work of the public schools*. The Survey Committee of the Cleveland Foundation, 1916; 255.

⁸See Johnston, C. H. *Junior-high-school administration*. *Educ. Ad. and Super.* 2: 1916, 71-86.

variation is shown. Table 10 shows the duration of the class period and the presence or absence of supervised study in 149 schools:

TABLE 10

USE OF SUPERVISED STUDY AND DIVISION OF CLASS PERIODS IN 149 SCHOOLS

Period, ¹ minutes	20	25	30	35	40	42	45	48	50	55	60	Not given	Total
Number of schools	1	1	26	4	64	2	18	1	9	1	19	3	149
Supervised study	1	..	8	2	23	2	10	1	9	1	19	3	81
No supervised study . . . . .	..	..	4	1	5	..	1	..	..	..	..	..	11
Not answering . . . . .	..	1	14	1	36	..	7	..	..	..	..	..	58

Of 8 schools to be established later, 1 will have a 30-, 5 a 45-, 1 a 50-, and 1 a 60-minute period.

There is manifest a decided reaction towards a longer school day for both the junior and the senior school, while the practice of lengthening the periods to approximately one hour and devoting a part of the time to study under the direction of the teacher to whom the pupil has just recited, is growing. Practically all the schools of Table 10 with periods longer than 40 minutes and about one-fourth of those having 40-minute periods have adopted this practice, while the remainder depend upon supervision in the general study hall. It would seem that a 40-minute period presents few advantages; it is too long for sustained attention on the part of immature students of this age and too short to gain many of the advantages of the study-recitation plan.⁹

After reviewing the literature dealing with supervised study, Parker concludes that "experimental investigations show that supervised study improves the work of poor students." He would require less home-study from high-school pupils, and would substitute definitely supervised study for a great proportion of the time now devoted to the study hall.¹⁰ Principal H. L. Miller points out that the hour period results in a gain of ten minutes over the customary 45-minute period, or a net gain of 25 per cent. A school year of 180 days may thus be increased approximately 45 days in actual teaching time in non-laboratory subjects.¹¹ Prin-

⁹See Wood, W. C. The course of study in intermediate schools. *Proc. Cal. Teach. Assn.*, 1914, 17-33.

¹⁰Parker, S. C. *Methods of teaching in high schools*. 1915, 522 pp. Chapt. 16, Supervised study (with bib.).

¹¹Miller, H. L. Report on the sixty-minute class period in the Wisconsin High School. *Sch. Rev.*, 23: 1915, 244-248.

incipal White, of Kansas City, Kan., sums up the difficulties he has encountered in the study-recitation plan as follows:

Some teachers do not like the plan; it interferes with their afternoon social engagements. Most parents approve it, but some of the children say it keeps them in school too long. The feeding of twelve hundred boys and girls is a problem. Some teachers cannot control a room for sixty-five minutes, and others cannot stop talking long enough to let the pupils study. It overworks the principal. These may all be overcome in time.¹²

The success of supervised study is dependent upon certain psychological laws, consciously or unconsciously applied. Here may be listed previously acquired knowledge or existing connections, attitudes or habits, the mental 'task' or *Aufgabe*, and the laws governing the formation of connections, or learning. In accordance with the first of these factors, a lesson must contain sufficient familiar elements that the pupil may prepare it in the minimal time, while at the same time it must contain sufficient new elements to effect the most profitable development. Herein probably lies a partial explanation as to why poor students and young students fail to profit through home-study, while it clearly shows how much help in the form of information a teacher should give in supervision. Attitudes and habits of study consist essentially in groups of these factors which are more permanent in character. Teaching habits of study becomes one of the most important tasks of the teacher in charge of supervised study.¹³

It is necessary that a lesson be definitely assigned in order that there may be as little ill-directed effort as possible. This principle also has a psychological foundation. Experimental studies of Marbe, Watt, Ach, Messer, and others, show the imposition of an *Aufgabe* has a material effect upon what is learned, that is, the course of thought is better determined when the instructions are specifically given. Still more obvious in their effects are the more permanent 'attitudes.' "The Herbartian 'step' of preparation,

¹²White, E. A. An experiment in supervised study. *Educ. Ad. and Super.*, 1: 1915, 257-262.

¹³Texts like G. M. Whipple's "*How to Study Effectively*," Public School Publishing Co., Bloomington, Ill., 1916, can probably be put into the hands of pupils in the senior high school to advantage and many of the rules for study can be imparted by the teachers to pupils in the junior high school.

McMurry's insistence on a definite aim for the pupil, Dewey's doctrine that pupils should feel appropriate needs and take the problem-solving attitude, and Bagley's demand that ideals of general method and procedure should be present as controlling forces in school drills," are notable efforts to have the child permanently disposed to proper response.

More definite and productive of results are the factors in learning which Baird outlines.¹⁴ In the first place, the modality or combination of modalities to which a stimulus appeals are individual and of great importance, although difficult if not impossible to determine by purely objective methods. It seems that the pupil learns more readily if appealed to through his individual modality, and that no particular individual gain results in appealing to all modalities. This presents a problem of no small importance to the teacher, for a single class would very likely contain children predominately visual, or predominately vocal-motor, kinaesthetic, or auditory, as well as some who possess different combinations of types.

Second, various factors must be taken into consideration in the presentation of the stimulus if learning is to be most efficient. Experimentation shows an optimal length of time—neither too long nor too short—for presentation, and that speed in learning and permanence in retention are proportional to intensity of the stimulation. Distributed presentations are more economical than accumulated presentations, for of two associations of equal strength the older association profits most by a single repetition. This indicates that too much time per day or per week may be spent upon a subject (cf. Jessup's conclusion in his study of arithmetic).

It is profitable to make attempts at recall of partially learned material. Learning is more rapid and enduring, the more it connects with associations previously established; and a lesson—as, for instance, a vocabulary in foreign language—is more readily learned when taken as a whole, with additional repetitions for difficult portions. Also, it has been conclusively shown that memory is more lasting when the learner undertakes a task with the expectation of retaining it permanently.

¹⁴Baird, J. W. Unpublished Lectures, 1915-16. See also Meumann, E. *The psychology of learning*. Translated by J. W. Baird, 1913; 393 pp.

Third, fatigue is a factor to be taken into account in every school task. Laboratory studies show that we may expect to find certain definite, optimal periods for work and rest. This suggests that experimentation should be carried on in the junior and senior high schools to determine the amount of rest that should be given at the end of an hour's work, and to determine the length of the school day and the most profitable division of time among the various school activities.

All of these factors point clearly to the fundamental principle of activity on the part of the pupil himself as the means by which he assimilates instruction and converts it into actual working knowledge, and as the means by which he develops habits of healthful activity and permanent interest and attitudes. Recent studies undertaken to ascertain the amount of activity on the part of pupils have given interesting results. Thus, Wilson¹⁵ cites the investigation of a public school in Manhattan by the Bureau of Municipal Research, which found, by reporting 18 recitations stenographically, that teachers were doing the thinking and talking rather than the pupils. The teachers used 18,833 words, the pupils 5,675, with 420 one-word responses, 208 one-sentence responses, 96 phrase responses, and only 20 extended replies. There were 622 "what," "when," and "where" and but 138 "why" or "how" questions. Similarly, Stevens,¹⁶ by stenographic reports of 20 New York classes, found 64 per cent of the spoken words 'teacher-activity,' and but 36 per cent of the words divided among 20 to 40 pupils. Different classes varied from 116 to 206 questions and answers during a 45-minute period. In 6 history lessons, the percentage of questions involving judgment ranged only from 5 to 27. In a group of 7 classes averaging fewer than 90 questions, 63 per cent were memory questions repeating the text-book; in 9 other classes, 73 per cent.

THE JUNIOR HIGH SCHOOL AND ELIMINATION OF PUPILS

School men have long argued that, given a course of study designed to meet individual needs, given different entrance re-

¹⁵Cited from Dealey, W. L. *Micromotion studies applied to education. Ped. Sem.* 23: 1916, 241-261. p. 259.

¹⁶*Ibid.*, p. 259.

quirements, and given a familiarity on the part of pupils with departmental teaching and an acquaintance with certain 'high-school' subjects, a greater number would be held through the ninth grade and possibly through the high school. An attempt has been made in this investigation to collect data bearing upon this question. A number of considerations, however, make any conclusion unsatisfactory. In the first place, most enrolment figures are lacking in many returns. Second, the increase in population, with many other factors contributing to increase enrolment, makes it difficult to arrive at a fair conclusion as to what extent the junior high school has been operative in increasing attendance. Third, each community doubtless presents its own peculiar problems, and it is manifestly unfair to group together for this comparison schools recently reorganized and those that have been operating a longer time.

An attempt was made to secure enrolment for the seventh, eighth, and ninth grades, and the total enrolment of the senior high school under the old plan and under the new.¹⁷ The following tables show comparisons made from data received:

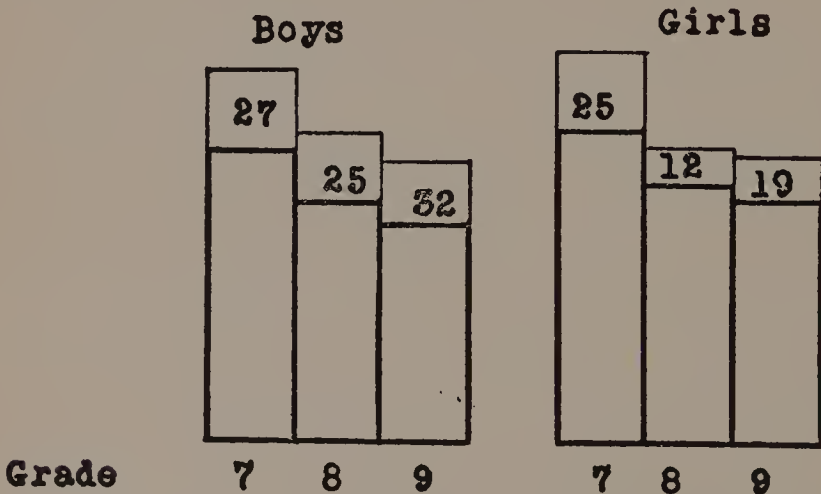


CHART 3

COMPARISON OF ENROLMENT UNDER THE OLD PLAN AND UNDER THE NEW FOR 17 SCHOOL SYSTEMS. ENROLMENT UNDER THE OLD PLAN IS SHOWN BY THE HEAVY LINE. THE PER CENT OF GAIN IS INDICATED NUMERICALLY

¹⁷For figures see Appendix, Section 4.

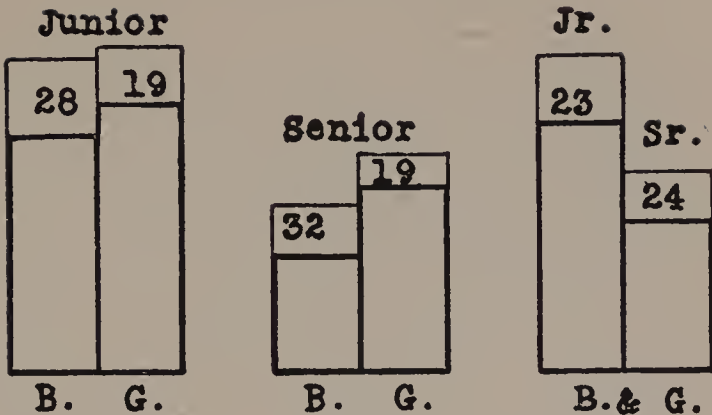


CHART 4

TOTAL GAIN FOR THE JUNIOR AND SENIOR HIGH SCHOOLS FOR THE 17 SCHOOLS INCLUDED IN CHART 3. ENROLMENT UNDER THE OLD PLAN IS SHOWN BY THE HEAVY LINE. THE PER CENT OF GAIN IS INDICATED NUMERICALLY

Under the old plan, 48 per cent of the junior enrolment were boys.
 Under the new plan, 50 per cent of the junior enrolment are boys.
 Under the old plan, 41.5 per cent of the senior enrolment were boys.
 Under the new plan, 44.4 per cent of the senior enrolment are boys.
 Under the old plan, for every 100 students in the junior high school, 60 were in the senior high school; under the new plan, 62.
 Five additional systems whose returns cannot be applied to this summary give, as far as they go, the same general results.

TABLE 11

GAINS, IN PER CENT, IN FOUR SYSTEMS, ORGANIZED ON THE SIX-TWO-FOUR BASIS:

Seventh-grade	boys, 45; girls, 27; total, 35
Eighth-grade	boys, 16; girls, 0; total, 7
Total junior high school	boys, 30; girls, 13; total, 20
Total senior high school	boys, 17; girls, 13; total, 13

Under the old system, for every 100 students in the seventh and eighth grades, 106 were in the high school; under the new system, 115.

The data shown in Chart 5 do not mean that 20 per cent of all the seventh-grade pupils, for instance, drop out of school before entering the eighth. It is probable that a considerable portion are held in the seventh grade and repeat the work.

Ayres shows that the usual loss between the seventh and eighth grades is 28.6 per cent; between the eighth and ninth, 28 per cent.¹⁸

¹⁸Ayres, L. P. *Laggards in our schools*. 1909, 236 pp. p. 13.

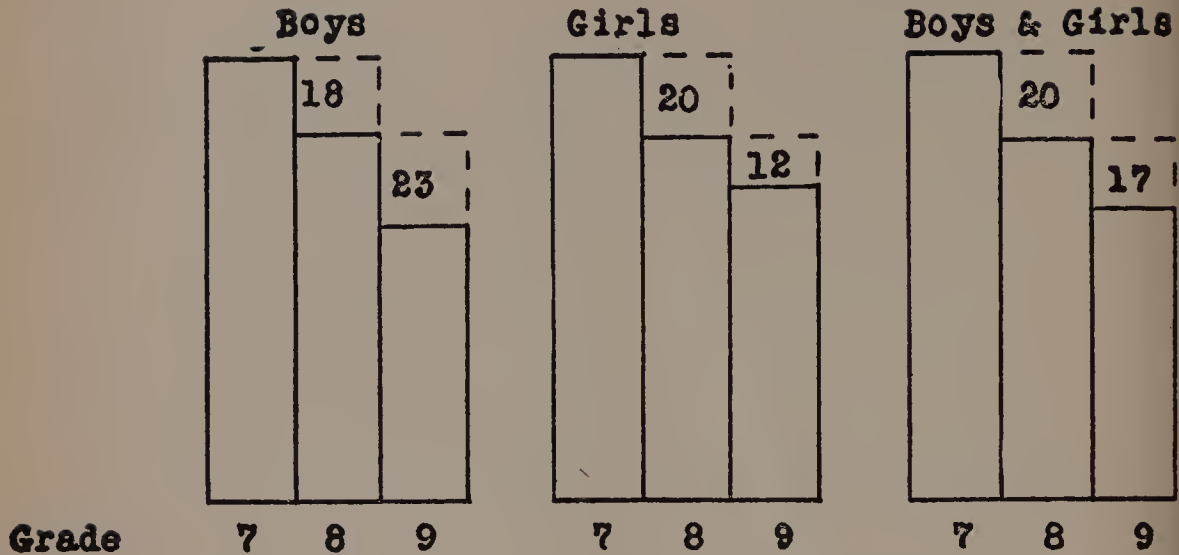


CHART 5

PERCENTAGES OF STUDENTS LOST BETWEEN THE SEVENTH AND EIGHTH GRADES AND BETWEEN THE EIGHTH AND NINTH IN 34 SCHOOLS ORGANIZED UPON THE SIX-THREE-THREE OR SIX-SIX PLAN

In these 34 schools, for every 100 boys in the junior high school, 53 are in the senior high school; for every 100 girls in the junior high school, 66 are in the senior high school. Combining, for every 100 students in the junior high school, 59 are in the senior high school.

Twenty-two additional school systems organized upon the six-two-four basis show a loss between the seventh and the eighth grade of 15 per cent of the boys and none of the girls, as against an expected loss, according to Ayres, of 28.6 per cent.

For every 100 boys in the junior high school, 133 are in the senior high school; for every 100 girls in the junior high school, 166 are in the senior high school. Combining, for every 100 students in the junior high school, 147 are in the senior high school.

Summarizing these results, and including other systems whose data were not furnished in such condition as to be applied to some of the preceding tables, we obtain the results shown in Chart 6.

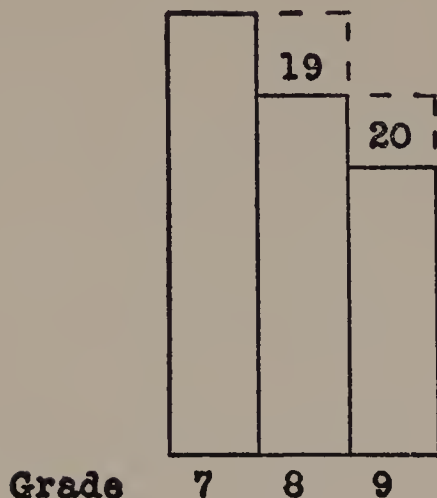


CHART 6

SIXTY-FOUR JUNIOR HIGH SCHOOLS LOSE 19 PER CENT OF THEIR SEVENTH-GRADE PUPILS BETWEEN THE SEVENTH AND EIGHTH GRADES. THE USUAL LOSS IS, ACCORDING TO AYRES, 28.6 PER CENT; ACCORDING TO THORNDIKE¹⁹, 32.5 PER CENT. FORTY-SIX JUNIOR HIGH SCHOOLS LOSE 20 PER CENT OF THEIR EIGHTH-GRADE PUPILS BETWEEN THE EIGHTH AND NINTH GRADES. USUAL LOSS, AYRES, 28 PER CENT; THORNDIKE, 32.5 PER CENT

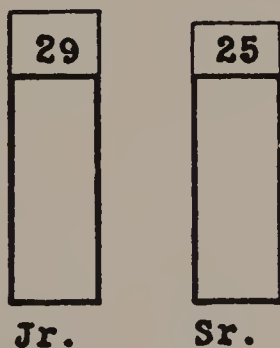


CHART 7

TWENTY-SEVEN SCHOOL SYSTEMS SHOW A GAIN OF 29 PER CENT IN THEIR JUNIOR-HIGH-SCHOOL ENROLMENT; 26 SCHOOL SYSTEMS SHOW A GAIN OF 25 PER CENT IN THEIR SENIOR-HIGH-SCHOOL ENROLMENT

¹⁹Thorndike, E. L. Elimination of pupils from school. *U. S. Bur. of Educ. Bull.* No. 4, 1907, 63 pp. p. 17.

Twenty-three schools had 47.8 per cent boys in the grades that later formed the junior high schools; under the junior-high-school plan, 49.4 per cent.

Twenty-four schools enrolled 40.6 per cent boys in their high schools under the old, 43.5 per cent under the new system.

Sixty schools enroll 46 per cent boys in their senior high schools. Ayres gives 43 per cent as the average percentage for boys in high schools.

Reports from several schools are here appended to give a clearer idea how the junior high school is affecting the problem of elimination in individual cities:

Crawfordsville, Ind. The per cent of pupils dropping out at the end of the eighth grade is no larger than the per cent dropping out at the end of the seventh grade, the ninth grade, or any other grade.

Lewiston, Idaho. The junior high school has a most beneficial effect here in the Lewiston schools. The school enumeration has scarcely changed, losing a little, if anything, while the upper six grades of the school system, that is, the present junior and senior high schools, have increased during the past two years from 303 to 442. Instead of falling off from 87 to 40, which it previously did, the eighth grade this year has enrolled 91 and the ninth grade 91 and last year there were only four lost between the eighth and ninth grades.

Roanoke, Va. The intermediate school plan has practically done away with the question of elimination peculiar to the fifth and sixth grades. We lose no more pupils at this point now than between any other two grades or, indeed, within any given grade.

Crookston, Minn., reports that in 1914-15 11 per cent of the seventh-grade pupils and 15 per cent of the eighth-grade pupils did not enter the next grade, evenly divided as to sex.

Berkeley, Cal., Grand Rapids, Mich., and Evansville, Ind. Principal W. B. Clark, of the McKinley Intermediate School, Berkeley, furnished data showing that, since the establishment of the school, 94.73 per cent of the pupils completing the eighth grade have entered the ninth, and 95.29 per cent of those completing the ninth grade have entered the tenth. Principal Preston, of the Franklin Intermediate School, Berkeley, reports that of the last seven classes completing the eighth grade under the old organization, 40.53 per cent entered the high school, and that of the first six classes completing the eighth grade of the intermediate school, there entered the ninth of the same school 65.53 per cent, not counting those who were transferred from other buildings. Principal Paul C. Stetson states that 86 per cent of the pupils in the eighth grade in the Grand Rapids junior high school last year entered the senior high school, as compared with 76 per cent of the eighth grades in the grammar schools of the city. In Evansville, Ind., according to Principal Ernest P. Wiles, only 56 per cent of the pupils completing the eighth grade in 1912 entered the high

school, as against 84 per cent last year of the pupils in the junior high school. (Briggs, T. H., *Rept. U. S. Commissioner Educ.*, 1914, vol. 1, p. 143.)

The fact that the school attendance for the state, based on total school enumeration and actual school enrollment and attendance, has increased 4.27 per cent during the two years since this pre-vocational work was revised and introduced into all our schools and the further fact that the average daily attendance on enrollment has increased 8.98 per cent indicates the value and popularity of this prevocational work. I do not know any other factor which might account for such an increase in enrollment and average daily attendance during this period. (Book, W. F., *Vocational education and the high school. Univ. of Ill. Bull.* No. 15, 1915, pp. 226-237, esp. p. 233.)

Houston, Texas. It is interesting to observe that we have had an enrollment of 1,648 white persons in the grades formerly known as high-school grades, as compared with 1,341 of the year preceding. This shows an increase of 307, or about 23 per cent, which is slightly more than double the rate of increase in the schools as a whole. This, of course, does not include the seventh-grade pupils enrolled in the junior-high-school building. However, it is the next year and the years following that must tell the real story of the success of the junior high school as a means for holding pupils in school. (Horn, P. W., *Elem. Sch. Jour.* 26: 1916, pp. 91-95.)

Rochester, N. Y. In conclusion, Rochester submits the following defense for this junior high school:

1. It has thus far increased by 15 per cent the number of pupils who have remained for eight years of work. This argues well for the reduction of eliminations from the seventh and eighth grades.

2. It has increased from 51 per cent to 94½ per cent the number of pupils who have completed the eight years of work and who are still remaining in school.

3. It has, thus far, produced a much saner distribution of high-school pupils. Whereas the distribution of all our high-school pupils is 66 per cent in the general or college-preparatory courses, 27 per cent in commercial courses, and only 7 per cent in the industrial and household-arts courses, the distribution of ninth-year pupils in the junior high school is 33 per cent in the general or college preparatory courses, 33 per cent in the commercial courses, and 34 per cent in the industrial- and house-hold arts courses. * * * (Weet, H. S., *N. E. A. Bull.*) 4: 1916, No. 6, p. 152.)

Dansville, N. Y. The attendance in this department has increased as is shown by the table.

1912-13			1913-14			1914-15		
Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
37	42	79	39	41	80	44	49	93

The increased enrollment is due to two causes. There is less elimination of students from the seventh and eighth years, and a larger number of rural

students are entering to prepare for high school. (Foster, J. M. *A Study of the Dansville High School*. 1915. p. 15.)

Neodesha, Kan. It is therefore with interest that I give the yearly enrollment in our Neodesha high school for the seventh, eighth and ninth grades for the past four years, going back one year before the establishment of the junior high school. The enrollment for 1915-16 is based on the actual enrollment in October, 1915, and will be larger before the end of the school year.

	Seventh Grade	Eighth Grade	Ninth Grade
1912-13.....	70	63	61
1913-14.....	78	63	64
1914-15.....	92	71	71
1915-16.....	98	86	76

The figures show an increase of 40 per cent in the seventh grade, 36 per cent in the eighth, and 24 per cent in the ninth grade, over the enrollment in those grades in 1912-13 before the junior high school was organized. (Study, H. P., *The Junior High School*, 1915. p. 5.)

Chanute, Kan. On roll at close of 1913-14, 1,811; at close of 1914-15, 1,896, a gain of 85, or 4.6 per cent.

Percentage of gain in aver. daily attendance for the system was..... 3.48
 Gain for the upper four grades.....20.
 Gain for the junior and senior high schools.....13.
 In the first six grades a loss of..... .3

At the end of the third month this year (1915-16):

The gain of the system by aver. daily attendance is..... 2.5%
 The gain in the upper six grades is.....15.2
 Loss in the elementary grades..... 2.5

Grand Rapids, Michigan, reports that since its organization in 1911, the junior high school has increased in numbers from 430 to 981 and the teaching force from 14 to 36. The principal reports that the work of the three-year pupils is of a distinctly higher grade than the work of the freshmen in the ordinary high school. (Elliff, J. D., *Missouri Sch. Jour.*, 32: 1915, p. 249.)

Muskogee, Okla. The enrollment of the present senior class is, boys, 35, girls, 41. To these should perhaps be added 12 or 15 who are on the doubtful list, but in all probability they will make up required credits for graduation at the end of the year. The enrollment of the senior class has increased since the establishment of the junior high school, as is indicated in the following graduating classes: 1914, 71; 1913, 49; 1912, 49; 1911, 35.

Ogden, Utah. Junior high school established in 1909. In 1910, there were 43 high school graduates—8 per cent of the total enrolment of the senior

high school. In 1914, there were 84 graduates—12.2 per cent of the total enrolment of the senior high school.

Evansville, Ind. The graduating class has increased from 90 to 135.

Los Angeles, Cal. The distribution by grades in per cents of total enrolment is:

Grade	7	8	9	10	11	12	7-8-9	10-11-12
1910-11	7.8	6.2	5.9	2.7	1.6	.8	19.9	5.1
1913-14	7.7	7.7	4.9	3.0	2.1	1.5	20.3	6.6

The following quotation from Briggs summarizes the answers to the questionnaire used in his study:

Of the number of principals of junior high schools reporting, 107 declare that the organization does retain pupils in school better than the older plan, and 2 say that it does not. To the three who say frankly that they do not know what the effect is, should probably be added all those who fail to answer the question.²⁰

In the returns received in the course of this investigation, superintendents have been reticent in saying the junior high school has reduced elimination. Of the less than half of them that answered the question, thirty-one say it has done so; two say it has helped; and the rest say either that it has been so recently organized they are not able to tell what the effect will be or that they have no data on the question.

From the foregoing data, the following conclusions are indicated:

1. Increased enrolment in grades seven, eight and nine is due in part, at least, to the junior high school. The same is true of grades ten, eleven, and twelve.

2. The percentage of students held in the junior-high-school grades is somewhat greater than under the old plan. This is also true of the senior high school.

3. The percentage of boys held in the last six grades is greater under the reorganized system.

4. Even yet the percentage of pupils eliminated at the end of the seventh and eighth grades is entirely too large. Here pupil mortality is probably greater than those interested in the junior high school are aware.

²⁰Rept. of U. S. Comm. of Educ., 1914. Vol. 1, p. 142.

THE JUNIOR HIGH SCHOOL AND RETARDATION OF PUPILS

It is more difficult to secure figures on retardation than on elimination, partly because of the recency of reorganization, and partly because, for various reasons, figures have not been compiled. Statistics of the most value would be those of separate schools comparing retardation by grade and class over a period of years.

Sufficient returns are not at hand to combine the returns from the different schools. The following paragraphs give the most important data received:

Decatur, Ill. Though we have a conviction that elimination and retardation have both been lessened by virtue of our new organization, figures have not been kept in such a way as to give us accurate comparative data.

Clinton, Ia. We have no figures bearing upon the question of elimination and retardation, but we have a large number of pupils who are over-age in these upper grades and we find that by offering a prevocational and differentiated course for this class of boys and girls, a much larger number remain to continue their studies through the Junior High and into the Senior. * * * * Because of this carefully supervised study plan, we find fewer of our pupils failing in first-year studies, such as algebra, Latin, and German, which are the new and untried fields of study, and for that reason so often cause many pupils to 'fall down' in the first-year high-school work.

Aurora, Ill. I find last year 29 per cent of the pupils were carrying on work of this kind and that none gained. This impresses me as rather extreme and it may be that we are setting the standards too high, or it may be that there should have been more retardation previous to this time. There is also the added fact that we have a large number of pupils coming into our seventh grade from parochial schools, who find it hard to carry on the work with the other pupils and these tend to increase the number retarded.

Santa Ana, Cal. No definite figures are available that would be of special value. We have a compulsory attendance law in this state and special effort is made to hold pupils in the school until they complete the required fourteenth year of age, as required by law. We have found that by having departmental teaching the brightest pupils are able to complete the required course of two years in one-and-a-half years, and that the slower pupils require an extra semester to complete the course. Each semester from five to ten pupils are permitted to skip by making up in extra credits and about half that number fail of promotion. Opportunity is given those failing to make up their failures the next term if they show the spirit to apply themselves. Most of them are able to be promoted in this way.

Brookings, S. D.

	Seventh Grade		Eighth Grade		Ninth Grade	
	Boys	Girls	Boys	Girls	Boys	Girls
Per cent repeating under old plan	25	20	30	25	30	25
Per cent repeating under new plan	10	8	10	5	15	12

Richmond, Ind. Percentage of over-age pupils in Richmond city schools, considering six and seven normal age for the first grade, seven and eight for the second, etc.:

Over-age	1913		1914		1915	
	Boys	Girls	Boys	Girls	Boys	Girls
All Schools.....	21.1	14.5	20.	12.	17.5	9.7
Garfield Junior.....	24.2	14.5	26.	15.	21.	10.
High School.....	21.1	15.4	21.	11.	14.	11.

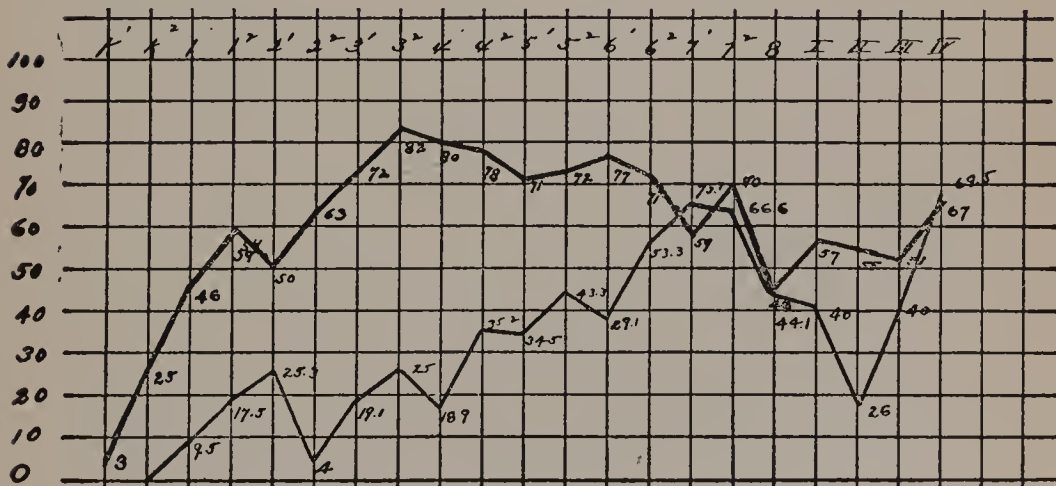
Hackensack, N. J. During the term ending June, 1912, just before the new plan of organization went into effect, the following numbers of pupils were repeating the grade: 7th, boys 14.5 per cent, girls 13.4 per cent; 8th, boys 8.2 per cent, girls 9.7 per cent.

At a corresponding time three years later: 7th, boys and girls 9.3 per cent; 8th, boys and girls, 10.8 per cent.

Faribault, Minn. Reports 16.2 per cent failures in the ninth grade under the old plan; 25.2 per cent under the new.

Curwensville, Pa. Two years ago out of an enrolment of 36 in the eighth grade we had 12 who were retarded. Today with an enrolment of 26 in that year we have 6 retarded, a decrease of about 23 per cent.

Solvay, N. Y. To overcome a large amount of retardation in the fall of 1912, special classes were provided, and the Binet tests and other measurements were utilized to determine the standing of the pupils. Account was also taken of physiological age.



The Curve of Retardation. Upper line shows the percentage of retardation of over-age pupils in September, 1913; lower line shows percentage of over-age pupils in February, 1916. The Bachman scale is used. This considers the child retarded if he is more than $6\frac{1}{2}$ when he enters the first grade, $7\frac{1}{2}$ for the second, $14\frac{1}{2}$ for the ninth, etc.

The ratio of the pupils above the compulsory age limit to those below it, is a peculiarly valuable test by which to determine the success of a school curriculum and spirit. For pupils who remain in school after they are allowed by law to go to work, do so because they are finding something which appeals to them as thoroughly worth while. In September, 1913, this ratio of pupils above the compulsory age limit to those below it was 2 to 13. It is now 2 to 11, a gain of nearly 20 per cent.

A high retardation percentage above the sixth grade is, therefore, an indication that the school is successful rather than the reverse. For, if pupils remain in school voluntarily, it is because they and their parents believe it to be worth while. (Cox, P. W. L. Report, 1915, pp. 27-32.)

Los Angeles, Cal. The percentage of promotions in the intermediate schools in all subjects is 3.4 per cent higher than in the high schools. The promotions in the ninth grade of the intermediate school are 6.4 per cent higher than in the high school. That failure in this grade in the high schools has presented a most serious problem is significant. There are two principal explanations for this result. First, the ninth-year pupil in the intermediate school is a senior in his school, while in the high school he is adjudged a 'scrub.' And second, the unnatural gap that exists between the eighth-grade elementary school and the first year of the high school has been eliminated. The loss in the ninth grade of the high schools by pupils leaving school has been abnormally high, reaching 54 per cent. The intermediate school loses but a small percentage of its pupils.

By reference to a similar table in the elementary-school report it will be seen that the promotions in the seventh and eighth grades of the high schools listed are higher than in the regular elementary schools.

The table shows that promotions in the smaller high schools are much higher than in the large high schools.

I believe that the size of the high school is responsible, in part, at least, for this result. A school with an enrolment exceeding 1200 to 1500 pupils is dangerously liable to lose the personal element in teaching and substitute the mechanical for it. This is a poor substitute and must result in deplorable loss.

Mathematics is the subject in which the highest rate of failures occurs. Manual work, physical training and music, show the lowest rate of failures.

To one who knows these schools there seems to be a close relationship between failures in subjects and the educational philosophy and temperament

of those teaching them. The dominant factor, is, however, the character of the subject taught. (Superintendent's report, 1914. pp 190-191.)

At Los Angeles the scheme has been projected largely from the office of the Superintendent. As his interest has been chiefly in the field of vocational education the first plans proposed in organizing curricula for these schools emphasized strongly this phase of work. As a result, pupils in many cases advanced to the regular high schools poorly prepared for the work there, and frequent failures resulted. In consequence of this a more conservative plan has been adopted this year through the cooperation of principals of the intermediate schools and high schools. (Hollister, H. A., *School and Home Educ.*, 1915. vol. 34, p. 118.)

In more than half of the replies to the questionnaire the request for data on retardation was unanswered. Thirty-five say the junior high school has reduced retardation; 4 say it has helped; and a number say either that their schools have been so recently organized they are unable to say what the effect will be or that they have no data on the question.

In the above figures and estimates, two points are noticeable. First, there is in several schools a gradual reduction of the percentage of students retarded; and second, there is in a few other schools an increase in the number retarded. The chief point brought out is that the junior high school is not a sure cure for this problem; but, on the contrary, the greatest care is needed to protect the young pupil from a departmentalized school where requirements in "high school" subjects are too high, or where subject matter is otherwise poorly presented and where the individual is lost sight of. If these obstacles are overcome, we have reason to believe retardation will be reduced.

APPENDIX

SECTION 1

JUNIOR-HIGH-SCHOOL TEACHERS

This section contains quotations from letters from superintendents and extracts from various other sources dealing specifically with junior-high-school teachers. It also contains the requirements made by the state of California for intermediate-school teachers; and an outline of special courses given at Pittsburg and Columbia universities and at the State Normal School at Bridgewater, Mass. (see pages 93-96.).

Fresno, Cal. The qualifications of teachers are the same as those for the other elementary schools. The teachers have been selected from the elementary schools on the basis of their special fitness for departmental teaching.

Oakland, Cal. Most of our junior-high-school teachers hold regular high-school certificates. These, in California, are practically equivalent to a Master of Arts degree.

Norwalk, Conn. We have established no hard and fast requirements for teachers in our school. In general, we believe that normal-school training, experience in grammar-school work, adaptability and professional ambition are more important than mere college graduation. We are now at work on a plan for vocational guidance.

Decatur, Ill. Our junior-high-school teachers have very much the same qualifications that our other grade-teachers have. There are a few college graduates amongst them and most of them are normal-school graduates. We aim to employ normal-school graduates, or their equivalent in scholarship and professional training, for all of our grades below the high school.

Quincy, Ill. The qualifications for junior-high-school teachers are the same as for the senior high school.

Aurora, Ill. Of the regular teachers in this school, five are normal-school graduates and one a college graduate.

Crawfordsville, Ind. Practically all our teachers in the ninth to twelfth grades are college graduates. In the seventh and eighth grades we desire them to be college graduates, but do not demand it. We want these teachers to be experienced and capable in every way.

Richmond, Ind. No set standard has been adopted as to qualifications of our teachers. We are frequently obliged to choose between an inexperienced

teacher of good scholarship and one with successful experience but less scholarship training. We decide each case on its merits, of course giving preference to the applicant with college training, if other conditions are at all equal. A number of our teachers are college graduates, some have had both college and normal courses, and two have A. M. degrees. On the other hand, several of our most valuable teachers have had but little college training.

Clinton, Ia. We have the same qualifications for teachers in the ninth grade that we have in our senior high: that is, they must be graduates of a standard college with some professional training. Thus far, we have made no standard qualifications for the eighth-grade teachers who have the common branches, except that they be high-school graduates, with some professional training in addition thereto, and successful experience through a considerable period of years in the grades.

Lewiston, Idaho. The senior-high-school teachers nearly all teach one or more junior-high-school classes. This introduces the teachers to the pupils and gives the pupil the advantage of a close acquaintance with older teachers.

Chanute, Kan. The standard qualifications of the junior-high-school teachers with us are determined by the price we can pay. At the present time we have four college graduates and the remainder have completed a high-school course with approximately two years of training in normal schools. Every teacher employed in the junior high school has had previous experience in teaching. Those taken from grade schools are the ones without a degree. The teachers who have degrees were taken from high schools.

Crookston, Minn. One of the difficulties to be guarded against is the placing of inexperienced college people in the junior high school in the capacity of instructors. First of all, they seem to be, as a rule, out of sympathy with this lower grade work, and do not present it effectively. * * * * I plan in the future to employ advanced normal graduates with considerable experience.

Rochester, Minn. We have, with very few exceptions, college graduates in our junior and senior high school. I rather think the type of a teacher with an additional year at the normal school, say three years beyond the high school, would make better teachers for our junior and senior high school, unless the college preparation has been for this work.

Trenton, N. J. For the academic subjects, we are transferring teachers—college graduates with experience in teaching, now in charge of the ninth-grade classes in city high school—and are selecting also teachers from the elementary schools who have taken advanced courses of study in their respective departments and have distinguished themselves by their success in teaching. For the industrial subjects, we are trying to find candidates who have had successful experience in the industry; that is, who are able to earn a living in the industry to be taught, who are able to teach, who are of irreproachable character and who have had good academic training. These positions are exceptionally hard to fill.

Rochester, N. Y. Once it was decided to select experienced grade teachers, the problem of intelligent selection presented itself. Accordingly, one year before the junior high school was to open, a series of Saturday morning institutes was begun. Classes were organized in Latin, German, English, elementary science, and mathematics. These were for applicants for teaching positions in the academic course. Specially trained teachers were available for the commercial and household- and industrial-arts courses, though Saturday morning institutes were organized and carried on through the year in these courses also. The major emphasis in these latter was on courses of study.

To these courses every experienced grade teacher in the system who met the minimal requirements and who cared to apply was admitted. Every applicant for a position as teacher of mathematics in the junior high school was required to have had, for example, the full mathematics courses of the upper high school. To continue with this subject of mathematics as illustrative of the principle which prevailed in these institutes, three definite things were accomplished. In the first place an opportunity was given for drawing up in outline a course of study in general mathematics for the eighth grade or second-year junior-high-school pupils of the academic course. * * * * The institute was in charge of the head of the department of mathematics in the high school to which the pupils of this particular junior high school would go. * * * In the institute class, on the other hand, were the experienced grade teachers with their knowledge of the capacities and limitations of upper-grade study. * * * * In the second place, these institutes gave to the grade teachers an opportunity for subject-matter review in algebra and geometry. And, lastly, the work of the teachers in these institutes constituted one important factor in the ultimate selection of teachers. What has been said of this course in general mathematics was equally true in principle of each of the other courses. (Weet, H. S. *N. E. A. Bull.*, 4: 1916, No. 6, p. 151.)

Eugene, Ore. I feel that the junior high school will result in the development of a very much superior type of upper-grade teachers than those ordinarily found in the seventh and eighth grades, for the successful junior-high-school teacher must have enough breadth of training or experience to be able to see not only her own part of the course, but also where the pupil is coming from and where he is going after leaving the junior high school. My own experience has been that the teacher with the most varied experience and training is the one most valuable for this work. The teacher with a normal-school course, rounded out by later college or university work would have an ideal training, to my mind, for this work.

Houston, Tex. The matter of the qualification of junior-high-school teachers is, indeed, a vital one. We have found by experience that those teachers who are university graduates, but who have for several years been teaching successfully in the elementary schools, are decidedly more successful as junior-high-school teachers than are the university graduates whose teaching experience has been exclusively in high-school work of the older type. There may be

several reasons for this. One of them is that the elementary-school teacher feels that she has somewhat of a promotion when she comes to the junior high school, while the high-school teacher sometimes feels erroneously that she is making a step downward. The chief reason, however, seems to me to be that the average good teacher in the elementary school comes nearer having the right attitude toward her work than does the average teacher in the "high school as it has been." I feel, however, that this discovery as to teachers is at least one definite contribution which we can make to the literature on junior high schools.

Furthermore, we find a number of teachers in our elementary schools who have not had the advantage of a university degree. These have, by our regulations, been excluded from the opportunity to teach high-school pupils. Many of these teachers have, however, gone ahead and taken a great deal of university work along some one particular line, such as English, for instance. Teachers of this kind are frequently among our very best teachers in the elementary work of our intermediate grades. Some of these are making the very best teachers we have for our junior high schools.

Ogden, Utah. We require that one-third of our junior-high-school teachers shall be college graduates with normal training. The other two-thirds must have two years of normal training, or its equivalent, in some particular special line.

Roanoke, Va. In my opinion the teacher who is a graduate of a standard four-year high school and has two years of collegiate training in the subject she offers to teach, may be said to be qualified. In the intermediate school I think about 40 per cent of the teachers ought to be male teachers. I have made some rather interesting observations on this score. While the number of male teachers in Roanoke does not reach 40 per cent for the intermediate grades, still we have some instruction in the sixth grade, and, of course, in the others, from men teachers.

Curwensville, Pa. Normal or college. Normal-school graduates must take professional work during summer at some university where courses for junior-high-school teachers are given.

La Crosse, Wis. All teachers must be graduates of the advanced course of some approved normal school. For the higher subjects, we require college graduation as well as professional training. No teacher is engaged who has not had at least one year of successful experience.

We need teachers in the junior-high-school grades as thoroughly trained and as efficient as those in the senior high school. Ultimately, yea, speedily, this means teachers with college degrees and professional training. It ought to mean, also, teachers of successful experience and maturity of judgment. The task of introducing pupils for the first time to new lines of thought and responses calls for the highest possible skill. The young callow girl or boy, perfect it may be in the knowledge of the subject to be taught, but ignorant

of the deeper meanings of life and life's relations, will serve the cause of education vastly better if put in charge of advanced courses than over beginners. From the typical young Ph. D. man in college and the typical young A. B. student in junior high school may the supervising authorities forever deliver the freshman student. (Davis, C. O., *Univ. of Mich. Bull.* Vol. 22, No. 9, 1915.)

The teachers of the high school are of necessity specialists; they have come into the high school after having taken undergraduate and graduate courses and for the most part without technical training in teaching. The methods which they tend to pursue are the only methods with which they are familiar, namely, those which are prevalent among university professors, and which, obviously, are poorly adapted to high school instruction. The point of view of such teachers tends to be that wherein the subject and its content are of paramount importance, oftentimes in a measure overshadowing interest in the pupil himself. Such conditions and such teachers are bad enough for the older pupils, but positively harmful to those coming in from teachers of a wholly different type respecting preparation, sympathy, outlook, and training. By selecting teachers in the lower high school who have first of all had successful experience in teaching in the grades, and who in the second place have taken enough advanced academic work to broaden their horizon somewhat beyond that of the grade teacher, the ideal combination is secured. Furthermore, by insisting that such teachers be assigned at least two different subjects rather than one, as often obtains in the larger high schools, the tendency toward undue specialization in these early years can be checked. (Bunker, F. F. The better articulation of the parts of the public school system. *Educ. Rev.*, 47: 1914, 255-256.)

The object lesson from this school is that teachers should be carefully selected for their adaptability to this most trying stage of common-school education. In this case conditions chiefly economic compelled the use of some teachers not at all suited to their work. Such conditions, if continued, are well calculated to defeat the chief aim of such a reorganization. Not only was the selection of teachers bad, but the situation was still further complicated by the evidently inadequate supervision. (Hollister, H. A., *School and Home Education*, 34: 1915, p. 118.)

California. Regulations governing permits to teach in intermediate schools. Holders of elementary-school certificates who have completed two years of work in a college, or one year of work in a college in addition to a normal-school course, may teach in the third year of any intermediate-school course, provided they comply with the following regulations, which are hereby established by the State Board of Education in accordance with subdivision 3-b of Section 1771 of the Political Code.

I. *For Candidates Who Are Not Graduates of Normal Schools.*

* * * That the candidate has completed at least sixty semester hours in regular college courses in such institution, including at least ten hours of peda-

gogy, and at least thirty hours in any three of the following departments: English, French, German, Spanish, Latin, History, Mathematics, Physical Science, Biological Science.

II. *For Candidates Who Are Graduates of Normal Schools.*

* * * That the candidate has completed at least thirty semester hours of which twenty hours shall be in regular college courses in such institution, in any two of the following departments: French, English, German, Spanish, Latin, History, Mathematics, Physical Science, Biological Science.

Columbia University. The following courses for junior-high-school teachers were announced for the summer session of 1916: Literature, English composition and grammar; methods of teaching Latin; demonstration class in first-year Latin; materials for civics; the teaching of general science; material for history; regional geography; the teaching of mathematics; biology.

There was also a course in the theory and practice of teaching; and a course in organization and administration.

Pittsburgh University. A course was given during 1915-16 dealing with the organization, curriculum, and principles of teaching that should obtain in the junior high school. Additional lectures were given on the historical background of the junior high school; school surveys and the junior high school; organization existing in the junior high school; characteristics of adolescents; features of foreign school systems pertinent in organization of junior high schools; qualifications of teachers for junior high schools; social activities for junior high schools. For the last semester the work was based upon the following books: Judd, *Psychology of High-School Subjects*; Parker, *Methods of Teaching High-School Subjects*; Dewey, *How We Think*.

State Normal School, Bridgewater, Mass.

- I. Outline of course for the training of intermediate teachers.
 1. Dissatisfaction with the present arrangement of eight years' elementary and four years' high school.
 2. History of the progress of the intermediate school idea.
 3. The main reasons advanced in support of this reform.
 4. Objections to the plan from these points of view:
 - a. Administrative.
 - b. Pedagogical.
 5. Changes involved in
 - a. Program of studies.
 - b. Methods of teaching.
 6. The extent to which this reorganization has been effected throughout the country in general and in Massachusetts in particular.
 7. Practical, even if temporary, standards of professional equipment of the intermediate-school teacher.

II. The new curriculum already provides:

1. More thorough training in the subject matter of those branches to be taught, such as English language and literature, history and social science, mathematics and geography.
2. A longer period of practice teaching in outside towns and cities.
3. Electives in practical science, or practical arts, or advanced geography.

III. With this start it is proposed further to develop this "intermediate" curriculum offered the normal students as follows:

1. A study, more thorough than could be accomplished in the two-year curriculum, of special groups of subjects, one group to be elected from among the whole number of groups.
2. A more extended study of psychology with particular reference to problems of adolescence.
3. A study, elementary as the limitations of earlier training and of available time compel, of economics and sociology.
4. Ample apprentice teaching in the intermediate or junior high school.
(Stacy, C. R. The training of teachers for intermediate schools. *Educ. Ad. and Super.*, 2: 1916, 448-455.)

SECTION 2

TYPICAL JUNIOR-HIGH-SCHOOL CURRICULA

The material in this section has been selected to give a wide range of illustration of junior-high-school curricula. The number of the types corresponds to the classification beginning at page

TYPE 3

Santa Fe, New Mex. (One curriculum.)

Grade 7. Required: Eng. 5; math. 5; hist. 3; civil gov. 2; geog. 3; physiol. 2; fine arts 3; music 2; house. arts 2; ind. arts 2; Span. 2.

Grade 8. Required: Eng. 5; math. 5; hist. 3; civics 2; gen. sci. 3; fine arts 3; music 2; house. arts 5; ind. arts 5; Span. 2.

Grade 9. Required: Eng. 5; alg. 5. Elective: Latin 5; Span. 5; first year sci. 5; ind. art. 5; house. art 5; freehand 3; mech. draw. 3; music 2.

The studies of the junior high school are required of all students, their purpose being in general to introduce pupils to a wide range of interests, and to prepare for the senior high school.

Springfield, Ill. (One curriculum.)

Grade 7. Required: Eng. (read., lit., gram., spell., pen.); arith.; geog. ($\frac{1}{2}$ yr.); U. S. Hist. ($\frac{1}{2}$ yr.); physiol. ($\frac{1}{2}$ yr.); music; draw.; indus. work. Elective: (Choose 1) German; indus. work.

Grade 8. Same as grade 7.

Grade 9. Required: Eng.; alg.; music; draw. Elective: Latin; German; anc. hist.; gen. sci.; com. arith.; indus. work.

Mt. Vernon, Ind. In the seventh grade, no electives are allowed excepting the industrial work (manual training, agriculture, sewing, cooking, music, and drawing). However, the pupils are told that, if they make a grade of 87 per cent or more on the average in the 7B and 7A, they will be allowed to elect other subjects. The course of study has been so organized that all of the essentials in these subjects are covered when the pupil has completed Grade 7A. As soon as any pupil has made an average, for two succeeding semesters, of 87 per cent or more in either one or in all of the subjects indicated, he is allowed to elect Latin or German, algebra, or industrial history, in the next succeeding half-year, provided it is the wish of his parents that he do so. If he does not make a grade of 87 per cent or more, he is required to continue the work in those subjects in which he fails to make the given per cent. The course of

study is organized so that there is additional and practical work for the pupil in grade 8 who fails to make the minimum grade. A pupil is given full high-school credit for such regular high-school subjects as he is permitted to elect to take in the junior high school.

In the eighth grade, all of the regular eighth-grade subjects are offered, both in the 8-B and 8-A grade, for such pupils as failed to make the minimum grade which permits them to elect the high-school subjects. Courses in Latin, German, algebra, and industrial history are also offered for the pupils who do not succeed in making the minimum grade and whose parents permit them to elect said subjects.

In the 9th grade, the regular high-school subjects are offered, with the usual elective privileges.

TYPE 3A

Richmond, Ind. We offer elective one sixth of the total amount of work in each grade. Work in English, mathematics, history-civics, geography, physical training, music and drawing is uniform for all and constitutes five-sixths of a pupil's entire work. For the remaining one-sixth he may elect Latin, German, English composition, or industrial work. Only pupils whose records show ability above the average are permitted to elect the Latin or German; the high-school work, being a composition course, is retained to satisfy patrons who are not reconciled to hand work but whose children are not eligible to the language course. Our industrial course is very popular and, we think, very successful. It should be noted that the pupil electing this has all the hand work required of academic pupils in addition to his elective, which makes his work in this line almost one-third of his total. As yet we think of the industrial work as prevocational only, merely trying through it to enable the pupil to determine whether his ability is chiefly in some line of hand work rather than academic lines. The scope of our industrial work is as yet rather limited, we offer woodworking, printing and drawing for the boys, and cooking, sewing and drawing for the girls. With increased facilities and teaching force we hope to broaden our field and thus increase the opportunity for each pupil to find himself. We have seriously considered introducing commercial work on an equal footing with our other electives but have not as yet seen our way clear to do so. I feel very certain that elementary shorthand, typewriting and book-keeping would be of practical value to any pupil of the seventh and eighth grades. I do not think time spent on these would be wasted if the pupil later decided in favor of a purely academic course in the high school and college.

San Francisco (One curriculum).

Grade 6. Required: Writing 50; arith. 250; lang. (comp. and gram.) 200; spell. 75; lit. and oral expression 200; geog. and hist. (alternating) 300; music 60; draw. 60; man. tr. or dom. sci. 80; gen. sci. (including physiol.) 80.

Grades 7 and 8. Required: Arith. 160; lang. (Comp. and gram.) 160; spell. 80; draw. 120; mod. lang. or typing 160; man. tr. or dom. sci. 160; gen. sci. 120.

The success of the departmental schools was so great that it seemed wise, two and one-half years ago, to give three of them a modified course of study and designate them as 'Intermediate Schools.' The work being so thoroughly systematized under the departmental system, it was found possible to add to the ordinary course of study a larger amount of elementary science, manual training, and domestic arts, and to give the pupils a choice between typing and a modern language. After two years of experimenting we were able during the summer vacation to formulate a time-schedule for these schools. The schools are a marked success, and we wish to extend this new type of school, so that pupils in every part of the city may be within easy reach of an intermediate school.

Rochester, Minn. (One curriculum.)

Grade 7. Required: Eng. 5; arith. 5; Amer. hist. 5. Elective: German 5; chorus 5; calisthenics 4; dom. art 5; shop 5; arts and crafts 5; dom. sci. 5; military drill 3.

Grade 8. Required: Eng. 5; geog. 5; pen. and spell. 5. Elective: Same as grade 7, with bkpg. 5; mechan. draw. 5 and agric. 5 in addition.

Grade 9. Required: Eng. 5; community civics 5; gen. sci. 5; math. (el. alg.) 5. Elective: Same as grade 8, with business law 5; indus. hist. 5; Latin 5; and poultry and gardening 5 in addition.

Boston, Mass. At the beginning of the school year 1913, authority was granted by the school committee for the establishment of classes in modern languages in the seventh and eighth grades of four elementary-school districts. The following year the number of these districts was increased by six, and at the beginning of the present school year ten additional districts undertook the work. The establishment of these foreign-language classes has been voluntary on the part of the principals, and the selection of a particular foreign language has been determined largely by the presence in the district of someone qualified to teach it. In all the districts the work is optional on the part of the pupils.

Coincident with the introduction of this work a council of eight members was appointed, comprising several heads of departments of modern foreign languages in the high schools. * * * * This council held several meetings, and invited to their conferences the teachers of modern languages in the grades.

The members of this council inspected thoroughly the modern language work in the grades, and in a report last June approved the quantity and quality of instruction given. The council thereupon recommended that pupils who had completed two years' work in modern languages in the elementary schools should receive on their entrance to any high school in the city five points' credit

toward their high-school diploma. This recommendation was approved by the school committee. The council thus recognized the work done in the seventh and eighth grades as the equivalent of the first-year work done in the high school.

A council on English for these intermediate grades likewise was created. This council was made up of high-school heads of departments. This council was created for the purpose of unifying the work in English in the seventh and eighth grades of the elementary schools and the first year of the high school, in order that the work might be made sequential, uninterrupted and free from repetition. * * * *

This (mathematics) committee has made such a definition, and progress of work for the first-year mathematics that will include instructions in algebra with the equation as a core, in constructive geometry and in arithmetic. * * * The purpose of these conferences is to make a sequential course in mathematics for grades seven and eight of the elementary schools and the first year of the high school.

A council likewise has been formed comprising teachers of science in the seventh, eighth, and ninth (high-school) grades. This council will aim at the construction of a program for work in science for the seventh, eighth, and ninth (high-school) grades.

From the foregoing, the goal of our work is apparent. It is to differentiate gradually at the end of the sixth grade, and to relate progressively and intimately the work of the seventh, eighth, and ninth grades. It is hoped that eventually these three grades will be segregated and constitute what is familiarly known as the junior high school.

TYPES 3A AND 5

Grand Rapids, Mich. (One curriculum.)

Grade 7. Required: Eng. 5; arith. 5; geog. 4 ($\frac{1}{2}$ yr.); Amer. hist. 4 ($\frac{1}{2}$ yr.); read. 1; bench work 3; dom. sci. 3; dom. art 1; printing 1; music 1; art. Elective: Bus. arith. 5; applied Eng. 5; Latin 5; mech. draw. 2; German 5; chorus or orchestra 2; printing 5 to 25 ($\frac{1}{2}$ yr.); dom. art 2 to 10 ($\frac{1}{2}$ yr.).

Grade 8. Required: Same as Grade 7, except shop work for bench work. Elective: Latin 5; German 5; mech. draw. 3; bus. arith. 5; applied Eng. 5; chorus or orchestra 2; printing 5 to 25; dom. art 5 to 10; art 5 to 10; metal working 2; el. sci. 2.

Grade 9. Eng. 5; alg. 5; anc. hist. 5; Latin 5; German 5; pen. and spell. ($\frac{1}{2}$ yr.) 5; phys. geog. 5; bkpg. 5; dr. and shop. 5; freehand $2\frac{1}{2}$ ($\frac{1}{2}$ yr.); dom. art 5; phys. tr. 1; design $2\frac{1}{2}$ ($\frac{1}{2}$ yr.).

For those pupils who do not seem to find what they need in the regular courses we offer special work. Our short commercial course is an example of what can be done for those who need special work.

This course was first opened in September, 1913, with about 25 students enrolled. There are now enrolled in that department about 70 pupils. The work is designed, primarily, so that each one receives individual instruction as far as possible. The traditional method of promoting is completely ignored. We plan to advance the individual student as rapidly as possible. Efficiency in the preceding work is the determining factor in all cases.

An examination of the course * * * * will show there are no electives offered. If a student is to complete this course and at the same time receive thorough preparation, the work necessarily must be made very intensive. Students are urged to remember that this course differs from the four-year commercial course in one important respect. The short commercial course will produce bookkeepers and stenographers but the four-year commercial course is designed to produce business men. In other words, the latter course is broader in its scope than the former.

TYPE 3B

Duluth, Minn. One curriculum for Grades 7 and 8, but differentiated into four curricula with Grade 9, three of which prepare for the advanced high school. Course (d) does not prepare for the high school.

Grade 7. Required: Read. and spell.; gram. and comp. (oral and written); arith. (pract. and com.); man. tr.; sewing; freehand; mech. draw.; music.

Grade 8. Required: Same, except cooking in place of sewing, civics for history in last semester. Algebra is added in last semester, and German or Latin runs throughout the year, 3 lessons per week.

Grade 9. Required: Eng. hist.; household econ. Elective: (a) Lat. or Ger., alg., freehand or music; (b) book., sten., com. arith., freehand or music; (c) alg., man. tr., mech. draw., printing; (d) Lat. or Ger., gen. sci., freehand, music, printing.

Fresno, Cal. Thus far, the elective work has been offered in but the eighth grade; later, it probably will be extended to the seventh grade. One of the three intermediate schools, the Edison Industrial School, is prevocational in its type. The school day is six hours long; the girls in the eighth grade are given one hour per day in domestic science including sewing and cooking, and the boys are given one hour per day in exercises in building trades, home improvement, and school construction and repair work. The pupils of the seventh grade are also given a large amount of industrial work. Considerable prominence is given to agriculture in this school, as the people of the community are largely engaged in the fruit industry of the surrounding country. * * * * The elective subjects have been chosen with a view to the useful nature of the material. One year of elective work in the intermediate schools has been planned so as to count as the first half of the similar work in the high school. Instead of the usual plan of introducing a foreign language, we are offering a year of work in advanced English, which will be the equivalent of the first half-year's work in the high school.

Trenton, N. J. One curriculum for Grades 7 and 8, but (a) academic, (b) commercial, and (c) industrial curricula beginning with Grade 9.

Grade 7. Required: Eng. 4; Eng. (with typing or for. lang.) 4; geog. and hist. 4; sci. 4; math. 4; shop 4; draw. 3; gymnasium 2 (½-hr. periods); music 2 (½-hr. periods).

Grade 8. Required: Eng. 4 (with typing); or for. lang. 4; geog. and hist. 4; sci. 4; math. (with elem. business forms) 4; gymnasium 2; music 1.

Grade 9. Required: Eng. 4; sci. 4; hist and civics 4; math. 4; draw. 2; gymnasium 3; music 1. (a) For. lang. 4; shop 4; (b) bkpg. 4; type. 4; (c) shop 6; draw. 2.

Each day consists of six periods of sixty minutes each. Work in science and mathematics will demand separate classes for girls and boys. Mathematics will not necessarily be the same for all boys and girls in the same year.

We are probably laying less stress upon the vocational and prevocational aspects of our curricula and our shop work than is customary in other schools of this type. Our aim in our industrial activities is more broadly educational than it is distinctively vocational or prevocational. We hope to use our industrial activities in such a way that they will vitalize our courses in mathematics, drawing, English and science and yet have considerable value as preparation for efficiency in the pupils' after-school careers, whether in industrial, commercial or professional pursuits. It is our aim, through our methods of teaching, selection of subject matter and personality of the teachers, to secure more important results in the line of self-expression, self-realization, self-reliance, skill, general intelligence, habit and character than in preparation for any specific vocation or for admission to higher educational institutions. The organization of the school and of its various curricula is to be regarded as an experiment and while every detail will have been thought out very carefully in advance, the organization is sufficiently plastic to permit any change that experience and unforeseen conditions may prove to be desirable.

La Crosse, Wis. The curriculum is the same for the first two years. There is a choice when it comes to the third year, which corresponds to the ninth grade or first-year high school. At this time, the pupil begins bookkeeping, or Latin, or German, or picks his course with reference to his subsequent education. * * * * We give now in the junior high school, during the first year, half the work in the manual arts which formerly occupied one year in the high school. After having finished this work, the pupils may go to the regular high school, and there specialize in some trade, as dressmaking or millinery for the girls or cabinet making, wood turning, foundry, forge work, or machine-shop practice for the boys.

South Norwalk, Conn. We try to provide for all pupils who have done the sixth-grade work and in addition for all those who are too old for their grade in the fifth or sixth. This latter group will in time probably include all the older pupils who are behind grade, except those who are markedly defective.

The backward groups in the junior high schools are taken care of with somewhat different assignments than those in the regular group. It is expected next year that those pupils will receive a very large amount of concrete and prevocational work and that the amount of abstract work will for them be reduced to a minimum.

Roanoke, Va. For the intermediate school I believe that, along with a good academic course, industrial work should be given, this to be of a strictly prevocational nature. I do not favor multiplication of too many branches in the intermediate school. Indeed, I am constrained to believe that the public school must learn the lesson of thoroughness and intensity rather than of extensive courses at the risk of very little real mental development.

TYPE 3C

Crookston, Minn. Academic, industrial, and commercial curricula.

Grade 7. Required: Gram. and read. or bus. Eng.; arith.; hist.; pol., ind. or com. geog.; shop or dom. sci.; pen. and spell.

Grade 8. Gram. and classics or bus. Eng.; arith. or com. arith.; hist.; shop or dom. sci.; pen.; spell.

In the academic course two double periods per week are devoted to shop work and domestic science. In the other two courses, three are given to those subjects.

East Chicago, Ind. Three curricula: (a) college preparatory, (b) industrial, and (c) commercial.

Grade 7 (the same for all). Required: Gram. 5; U. S. hist. 5; arith. 5; draw. 4; spell. 3; writ. 2½; music 2; physical train. 2½.

Grade 8. (a) Physiol. (½ yr.) 5; gram. (½ yr.) 5; alg. 5; Latin or German 5; dom. sci. or man. tr. 5; music or draw. 2; phys. tr. 2½. (b) Civics 5; physiol. (½ yr.) 5; civics (½ yr.) 5; dom. sci. or man. tr. 5; indus. geog. 5; phys. tr. 2½. Electives selected from the other courses. (c) Bus. arith. 5; bkpg. 5; shorthand 5; typing 5; com. Eng. 5; pen. 2½.

Grade 9. (a) Eng. 5; Latin or German 5; gen. sci. 5; geom. 5; music or draw. 2; phys. tr. 2. (b) Eng. 5; phys. tr. 2. Electives from other courses including shop work, dom. sci. printing, and mech. drawing. (c) Bkpg. 4; shorthand 5; typing 5; com. geog. (½ yr.) 5; com. law (½ yr.) 5; Eng. 5.

Cincinnati. Lafayette Bloom Junior High School. (a) Industrial arts, (b) household arts, and (c) commercial curricula.

Grades not given. Required. Phys. tr. and hygiene 5; Eng. 2; hist. and civics 2; music 1. Elective: (a) Choose 20 additional hours: shop work 10; application 1; science 3; math. 4; draw. 2; German 5. (b) Same as (a), except household arts for shop, and design 2 in addition. (c) Hist. of commerce and industry 4 required. Choose 16 additional hours: sci. 3; application 1; math. 5; printing 3; drawing 2; German 5; advertising and salesmanship 2.

Richmond, Va. The general course, though making slight modifications in allowing more option in the choice of subjects, covers practically the work of the last two years of the present elementary course and that of the first year of the present high-school courses. The commercial course, while including the more important subjects offered by a general course, also offers elementary instruction in the usual commercial subjects. The prevocational courses, while likewise embracing the essentials of a general course, give instruction in the general principles underlying various industrial and domestic arts. The differentiation in these courses is seen in the elective rather than in the required subjects. Satisfactory completion of any one of the three courses offered will enable the pupil to begin the second year's work of the senior high school.

The choice of a course is very important, and any course selected must meet the approval of the principal and the advisory committee. A course once begun should be pursued to its completion, unless a change is permitted by the principal and the advisory committee.

Norwalk, Conn. Provisional outline for junior high school. (a) Academic, (b) commercial, and (c) manual arts curricula for grades seven and eight. With the ninth year, the commercial curriculum is divided into (1) a clerical and (2) a commercial curriculum; and the manual arts into (1) a general and (2) a shorter curriculum.

Grade 7. Required: Eng. 260; math. 200; geog. 160; hist. and civics 160; draw. and man. tr. or dom. sci. 160; music 40; phys. exercises 50; opening exercises 30; assembly 40. (a) Elem. phys. and hygiene 100; pen. 60; study 240. (b) Elem. phys. and hygiene 80; pen. and com. forms 80; study 240. (c) Same as (a), except that 40 minutes is taken from study and added to man. tr. or dom. sci.

Grade 8. Required: English 260; hist. and civics 200; music 40; phys. exercises 50; opening exercises 30; assembly 40. (a) Math. (arith. and alg.) 200; sci. (agric.) 120; draw. and man. tr. or dom. sci. 120; pen. 60; geog. or Latin 160; study 220. (b) Com. arith. and bkpg. 200; sci. (agric.) 80; pen. and typing 140; German or com. geog. 160; study 220; (c) Com. arith. 200; sci. (agric.) 120; draw. and man. train. or dom. sci. 160; pen. 60; com. geog. or German 160; study 180.

When pupils of the seventh year are grouped into courses, the differentiation will be largely one of selecting material for study in accordance with the phase of work designated by the name of the course and adjusting methods of procedure to meet these requirements. The subjects to be scheduled in the various courses are practically the same. Pupils can, therefore, be easily reclassified at the close of the year. The outline for the eighth year shows a larger variation. * * * * At the close of this year it will be more difficult for pupils to pass from one course to another. * * * * In the ninth year the work scheduled is more definitely grouped into courses. For pupils who will probably

leave school at the close of this year, or possibly after one year in the Senior School, the clerical and shorter courses are planned. In the first year of the senior high, the academic courses will divide into the classical and the scientific, the commercial retains its two divisions and the manual arts course divides into two courses as now planned or into three, if facilities are available for a domestic science course.

TYPE 3D

University of Oregon. The main argument behind this movement, to my mind, is the fact that the four years does not afford sufficient time for consecutive work in the main cores of instruction. As a result, the work in such subjects as history, civics, science and foreign languages is scattered and superficial. In our model school our main aim will be to work out coherent lines of consecutive instruction comparable to those in the best continental secondary schools. Of course, we shall not attempt to do this simply through the employment of coercion, as in Germany, but by the applications of the psychology of adolescence.

Lewistown, Idaho. Beginning with the third junior year, all the work is elective, except English. All work, however, must be elected by majors and minors. Five years' work is offered in Spanish, German, and Latin and six years in shop work, which includes forging and construction work. Six years' work is offered in home economics. The senior-high-school industrial work for both boys and girls is made strongly vocational. Agriculture was introduced this year and two years' work is offered.

Wisconsin High School (Madison) (One curriculum).

Sixth Class. Required: English 5; math. 5; geog. and gen. sci. 5; music; phys. ed'n. Electives: German 5; French 5; man. arts 5; dom. sci. 5; dom. art. 5; draw. 3.

Fifth Class. Required: Eng. 5; math. 5; hist. and citizenship 5; music; phys. ed'n. Elective: Gen. sci. 5; German 5; Latin 5; French 5; man. arts 5; dom. sci. 5; dom. art. 5; draw. 5.

Fourth Class. Required: Eng. 5; music; phys. ed'n. Elective: math. 5; gen. geog. 5; agriculture 5; anc. hist. 5; German 5; Latin 5; French 5; man. arts 5; dom. art 5; draw. 3.

As a further guide in the selection of studies, it should be clear at the outset that each pupil, *beginning with the fourth class*, will be required to complete for graduation, in addition to the required English, at least *three units* of elective work in at least two of the remaining groups: (a.) history; (b.) mathematics; (c.) science; (d.) foreign language.

In deciding upon courses of study, pupils and parents are requested to keep in mind the general plan of the school. The six-year organization may, for guidance in arranging studies, be divided roughly into three two-year periods. At the beginning of each two-year period each pupil is permitted to make a new selection of studies, in so far as changes desired are in agreement

with the general requirements stated above. The aim is to map out *at opportune times* two-year courses in accordance with the best knowledge then available as to the pupil's capability and purpose. By this method the courses selected are intended to provide a *continued trial* of a pupil's qualities, with a view of finding his best.

TYPE 4

Solvay, N. Y. The work, as we give it, is divided into six separate courses. While often the same subjects may be required in every course, there may be considerable difference between the subject as given in one course and the same subject as given in another course. English, very similar to the elementary syllabus requirement, except that we teach less technical grammar, is given in the academic course in both the seventh and eighth grades, with still less technical grammar. English is required in the household and practical arts courses, and in the two vocational courses; but we give in these courses no technical grammar whatever. History in the academic course and commercial course follows the elementary-syllabus requirements. History in the vocational courses, household and practical-arts courses is much less complex, and gives more emphasis to inventions and commercial history. A wide-range divergence is found in arithmetic. The academic course takes commercial applications of percentage, but soon gets to treating it as algebra. They treat their mensuration as geometry. Pupils in the commercial course spend all their time on commercial applications and arithmetic, in the particular insistence on a high standard of accuracy and rapidity in computation. Drawing, too, differs between the courses, as does also the science work. The academic pupils all take German five times a week for two years. Commercial pupils take typewriting for two years, bookkeeping for one year. Household-arts pupils take two double periods of cooking and two double periods of sewing each week for two years. Practical-arts pupils take four double-periods a week of shop work and one double-period of shop drawing for two years. The vocational pupils spend one-half of their time in practical work. The boys of the commercial and academic courses get one double-period a week of shop work, the girls of these courses get one double-period of cooking and one of sewing.

TYPE 5

Clinton, Ia. (1) [Offers] a high-school preparatory course for those who expect to continue their studies in high school after completing the ninth grade; (2) a vocational course for pupils who do not expect to continue in school longer than the ninth grade. For these pupils a full course in manual training is offered for boys and a full course in home economics for girls, two years in length. In the place of algebra, they are given industrial arithmetic and bookkeeping.

We have had experience of a year and a-half with segregation of classes with regard to sex and find many advantages with regard to the plan. In the first place, the boys recite better in classes by themselves, which is also true

of the girls. We are able to arrange a program of vocational classes—such as manual training and home economics—more conveniently where boys and girls are in separate assembly rooms and in separate classes in all their studies. We are also able to give to girls a modified course in arithmetic in the eighth grade, which is a very important thing, for much of the work in arithmetic is entirely outside of the girls' requirements in life. We also find it desirable and practicable to emphasize certain topics in physiology for girls of special importance to them, and on the other hand, we elaborate questions for the boys which are of special concern to them. We are this year trying to modify and adapt the general-science work to the needs of the boys and girls, but we find this somewhat difficult because there is no good text especially prepared for girls. I consider this question of the segregation of the sexes a very important one for the junior high school or for any intermediate school which has to deal with boys and girls ranging in age from eleven to sixteen. But the full value of this separate instruction will not be accomplished until the demand is recognized in textbooks which contain matter especially prepared for the need of girls. The average textbook comes nearer meeting the requirements of boys than of girls.

TYPE 7

New Britain, Conn. (Prevocational grammar school).

Curricula: (a) General, designed to prepare for any course in the high school or the vocational school; (b) business and English, designed to prepare for the commercial curriculum in the vocational school and also intended for those pupils who go directly from grade seven and eight into positions in stores and offices; (c) practical arts (boys), designed primarily to help boys find themselves and make an intelligent choice of trade courses in the vocational school, also to be of service to boys who are to leave school for industrial life at the end of the seventh or eighth grade; (d) practical arts (girls), designed to prepare for the duties of home making and house keeping, also leading to the home-making curricula or to trade curricula in the vocational school.

Grade 7. Required: Eng. (gram., comp., spell.) 4 or 5; arith. 3 or 4; geog. 3 or 4; hist. and civics 3 or 4; read. and lit. 3 or 4; draw. and art 1 or 2; sci. and health 1; music 1; pen. 1; physical exercise 1; gen. ex. 1. (a) Man. arts 2, or dom. sci. 2; (b) correspondence 2; typewriting 2; (c) ind. work 9; (d) household arts 3, draw. and ind. work 3; sewing and dressmaking 3.

Grade 8. Required: Eng. (gram. comp. spell.) 4 or 9; lit. and read. 3, 4, or 5; hist. and civics 3 or 4; science and health 1; music 1; pen. 1; physical exercise 1; gen. ex. 1. (a) Arith. 5; man. arts or dom. art. 2; draw. and art 1 or 2; (b) com. arith. 3; com. geog. 1; book. and accounting 3; correspondence 2; typewriting 2; (c) ind. arith. 4; ind. work 4; (d) household arts 3; garment-making 3; draw. and ind. work 3; applied arith. 3.

In the required subjects, the greater number of hours per week is found in connection with the general curriculum.

SECTION 3

DETAILED DATA FROM 100 AMERICAN CITIES

Table 12 contains the replies of 100 representative cities to the following questions:

1. When did you put the junior high school in operation? (For summary see Table 1, page 24.)
2. What grades are included in the junior high school? (For summary see Table 8, page 88.)
3. Upon what do you make entrance to the junior high school depend? (See page 48.)
4. (Request was made for figures on enrolment and retardation.) Do you attribute gains or losses in enrolment and retardation to the new system? (See page 101.)
5. Are your manual and household-arts courses planned (*a*) to help the student find his life's work, (*b*) to fit for a trade, or (*c*) for general educative value? (See page 73.)
6. Are these courses required? (See page 75.)
7. Is the junior high school housed alone, or in the same building with the six elementary grades, or with the senior high school? (See page 92.)
8. Does it have its own principal? (See page 96.)
9. Do you offer, or contemplate offering, two years of college work in addition to your high-school course? (See page 94.)
10. Have you any segregated classes or classes grouped according to physiological age? (See page 44.)
11. What is the length of the recitation period in the junior high school? (For summary see Table 10, page 98.)
12. Do you have supervised study? (For summary see Table 10, page 98.)
13. Is there added interest on the part of (*a*) parents, (*b*) teachers, (*c*) pupils (due to this organization)? (See page 94.)
14. In your opinion, do the colleges and universities favor the junior high school? (See page 93.)

Explanation of Table 12. In the column showing entrance requirements, the single asterisk (*) denotes that promotion depends upon the child's ability as judged by the teacher or principal; the double asterisk (**) that entrance depends more upon general ability in the rudimentary subjects, with perhaps some account taken of age; and the three asterisks (***) that mature pupils are admitted from the elementary school. (See page 134.)

In the junior-college column, schools marked (†) are contemplating the establishment of a junior college. (See page 134.)

In the last column, the interrogation point (?) signifies that the one replying did not know whether the collegiate institutions favored the junior high school or not. (See page 134.)

These answers to questionnaire are quoted from C. C. Bingaman: A report on the intermediate or junior high schools of the United States (Goldfield, Iowa, 1916).

Would you advise the junior high school plan for schools having from five to ten teachers? Yes, 90; no, 6; 6 gave answers to the effect that it could not be well worked out with less than from 7 to 15 teachers.

Are students held in school longer because of the added advantages of the junior high school? Yes, 91; no, 4; too early to say, 7.

Do you have departmental teaching? Yes, 143; no, 3.

How many extra teachers were required when you organized this plan? None, 58; one, 21; five, 2; three, 3.

Have you omitted any common branches? No, 98; yes, 8; shortened, 7; better taught, 2.

Did you economize on building room in organizing? Yes, 47; no, 40.

Is home study necessary in the junior high school, if supervised study is given? Yes, 66; no, 7; a little, 11.

Do you have supervised study? Yes, 96; no, 14; in junior high school only, 5; some, 9; favor it, 3.

What students are helped by supervised study? All, 34; medium and slow, 20; weak, 13; any needing help, 1.

Do you have arguments to offer against the junior high school? Yes, 32; no, 78.

TABLE 12
DETAILS CONCERNING THE JUNIOR HIGH SCHOOL IN 100 CITIES

	When	Grades	Entrance Requirements	Loss Retardation and Elimination	Purpose of D. S.	M. T. and D. S. required?	Jr. H. S. Housed Alone	Own Principal	Junior College	Segregated Classes	Length of Rec. Period	Supervised Study	Added Interest	Do Colleges Favor?
Anaheim, Cal.	6-8	.....	.....	a	yes	el.	no	2 yr	no	50	yes	all	.....
Berkeley	7-9	pro.	yes	c	no	yes	yes	no	no	40	yes	a b	yes
Chico	8-9	pro.	.....	c	yes	yes	.....	no	no	45	yes	all	.....
Fresno	7-8	pro.	.....	a c	yes	yes	.....	2 yr	sex	30	yes	b c	.....
Los Angeles	7-9	pro.	.....	a	.....	.....	yes	2 yr	.....	40	yes	.....	yes
Oskland	7-8	pro.	.....	a c	.....	el.	.....	no	no	.....	.....	.....	.....
Palo Alto	7-9	pro.	.....	a	yes	yes	yes	no	no	40	yes	all	.....
San Francisco	7-8	pro.*	.....	c	.....	el.	no	.....	sex	.....	.....	.....	.....
Santa Ana	6-6	pro.	.....	.....	.....	h. s.	no	no	sex	40	yes	all	.....
Santa Rosa	7-8	pro.	.....	c	.....	h. s.	no	no	sex	45	yes	a c	.....
Ft. Morgan, Col.	7-8	pro.	.....	c	.....	el.	yes	.....	no	45	yes	b c	.....
Lewiston, Idaho	7-9	pro.	yes	a c	.....	h. s.	.....	.....	no	60	yes	.....	.....
Nez Perce	7-9	pro.	.....	a	no	el.	yes	no	no	60	yes	all	.....
Aurora (E), Ill.	8	pro.	.....	a	no	yes	yes	1 yr	no	30	yes	a b	.....
Decatur	7-8	.....	yes	.....	.....	yes	yes	.....	no	.....	.....	.....	.....
Quincy	7-9	.....	.....	c	.....	el.	no	.....	no	30	.....	all	yes
Crawfordsville, Ind.	7-8	**	.....	c	yes	h. s.	yes	.....	no	40	yes	all	yes
East Chicago	7-9	pro.	.....	a c	1 yr	yes	yes	1 yr	no	60	yes	all	yes
Evansville	8-9	pro.	yes	a	.....	h. s.	no	.....	***	40	yes	all	yes
Gas City	7-9	pro.	.....	c	yes	h. s.	.....	.....	sex	40	yes	all	.....
Lafayette	7-9	***	.....	c	yes	el.	yes	no	***	40	yes	all	.....
Madison	6-8	pro.	.....	a b	yes	yes	yes	no	no	30	yes	all	.....
Mt. Vernon	7-9	pro.	.....	a c	1 yr	yes	yes	no	no	35	yes	all	yes
Muncie	6-8	pro.	.....	all	yes	el.	yes	no	no	30	no	all	.....
Richmond	7-8	pro.	.....	.....	.....	h. s.	yes	.....	sex	50	yes	.....	.....
Seymour	7-8	pro.	yes	c	yes	h. s.	no	no	sex	60	yes	all	.....
West Lafayette	7-9	pro.	.....	c	.....	h. s.	no	no	no	48	yes	all	yes
Clinton, Ia.	8-9	***	.....	all	no	yes	no	.....	sex	40	yes	.....	.....
Denison	7-8	pro.	.....	a c	no	h. s.	no	no	no	45	yes	all	yes
Goldfield	7-9	pro.	yes	a	no	el.	no	.....	no	60	yes	all	yes
Hampton	6-6	**	.....	.....	yes	h. s.	no	.....	no	40	yes	b c	.....
Radcliffe	7-8	**	.....	b c	yes	h. s.	no	.....	no	30	yes	all	yes
Shenandoah	7-9	pro.	.....	c	yes	yes	yes	no	no	30	yes	all	.....

TABLE 12—Continued

	When	Grades	Entrance Requirements	Less Retardation and Elimination	Purpose of D. S.	M. T. and D. S. required?	Jr. H. S. Housed Alone	Own Principal	Junior College	Segregated Classes	Length of Rec. Period	Supervised Study	Added Interest	Do Colleges Favor?
Winfield.	14	7-9	pro.	yes	a c	no	el.	yes	no	no	40	yes	all	yes
Arkan. Cy., Kan.	12	7-8	pro.	.....	c	yes	yes	yes	no	no	20	yes	all	.....
Chanute.	14	7-9	pro.*	.....	all	.....	yes	yes	no	sex	60	yes	all	.....
Fort Scott.	04	7-8	*	.....	all	no	el.	no	no	no	60	yes	all	.....
Girard.	15	7-8	pro.	.....	all	no	h. s.	yes	no	no	30	no	all	.....
Great Bend.	13	7-8	pro.	yes	a c	yes	h. s.	yes	no	**	30	yes	all	.....
Hays.	14	7-9	pro.	.....	a c	no	h. s.	no	no	no	.....	yes	all	.....
Manhattan.	14	7-8	pro.	.....	a c	no	h. s.	no	no	sex	40	no	all	yes
Neodesha.	13	7-8	pro.	.....	c	no	h. s.	no	no	no	60	yes	all	yes
Newton.	13	8	pro.	.....	all	no	h. s.	no	no	no	45	no	all	yes
Topeka.	14	7-9	*	.....	a	.....	el.	.....	no	.....	30	yes	.....	.....
Winfield.	18	7-8	pro.	.....	c	yes	.....	no	no	no	25	yes	all	.....
Corydon, Ky.	14	7-9	.....	yes	.....	.....	.....	.....	.....	no	40	yes	all	.....
Madisonville.	12	7-9	pro.	yes	c	yes	h. s.	no	no	yes	45	yes	all	yes
Morganfield.	15	7-9	pro.	yes	.....	.....	h. s.	no	no	no	40	.....	b c	.....
Paducah.	15	7-8	pro.	.....	c	yes	el.	yes	no	sex	40	.....	.....	.....
Arlington, Mass.	15	7-8	***	.....	a c	no	yes	yes	no	sex	40	no	all	.....
Boston.	13	7-8	.....	.....	all	no	cl.	yes	no	sex	40	yes	all	yes
Dudley.	15	7-10	pro.	.....	c	no	yes	yes	no	.....	.....	.....	.....	.....
Worcester.	99	7-8	*	.....	c	no	el.	yes	no	no	40	yes	all	.....
Adrian, Mich.	15	7-9	pro.	yes	c	no	el.	no	no	no	30	no	all	.....
Detroit.	11	7-9	pro.	.....	c	1 yr	el.	yes	no	no	45	yes	all	.....
Austin, Minn.	14	7-9	pro.	yes	all	no	h. s.	yes	no	no	50	yes	all	.....
Cokato.	13	7-9	pro.	.....	a b	yes	el.	yes	no	no	40	.....	all	yes
Crookston.	13	7-8	pro.	.....	all	yes	h. s.*	yes	no	no	40	yes	all	.....
Dear River.	14	6-6	.....	.....	a	no	el.	yes	no	no	40	yes	all	.....
Duluth.	13	7-9	*	.....	a b	.....	el.	no	no	no	40	yes	.....	.....
Faribault.	13	7-9	.....	.....	.....	.....	h. s.	yes	no	sex	.....	.....	all	.....
Hutchinson.	13	7-8	pro.	.....	.....	no	h. s.	yes	no	sex	60	yes	all	.....
Rochester.	12	7-9	*	.....	.....	.....	h. s.	yes	no	sex	30	yes	all	.....
Gothenburg, Neb.	14	7-9	pro.	.....	c	no	el.	no	no	sex	.....	yes	all	.....
Concord, N. H.	10	7-8	pro.	.....	a c	yes	yes	yes	no	no	40	yes	b c	.....
Hackensack, N. J.	12	7-8	***	yes	a c	no	el.	yes	no	sex	60	yes	b c	.....
Trenton.	14	7-10	.....	yes	a c	no	yes	yes	no	sex	60	yes	all	.....
Brockport, N. Y.	12	7-8	pro.	yes	c	yes	el.	no	no	.....	60	yes	.....	.....
Danville.	13	7-8	pro.	yes	.....	.....	h. s.	no	no	no	45	yes	all	.....

TABLE 12—Continued

	When	Grades	Entrance Requirements	Less Retardation and Elimination	Purpose of D. S.	M. T. and D. S. required?	Jr. H. S. Housed Alone	Own Principal	Junior College	Segregated Classes	Length of Rec. Period	Supervised Study	Added Interest	Do Colleges Favor?
Sectia	14	7-8	pro.	.....	.....	.....	h. s.	no	no	no	45	yes	b	.....
Silver Creek	10	7-8	pro.	yes	a	.....	h. s.	no	no	no	40	no	b c	.....
Solvay	14	7-9	***	.....	.....	.....	el.	yes	no	sex	.....	yes	all	?
Bismark, N. D.	14	7-8	pro.	.....	a c	yes	el.	yes	no	sex	45	yes	b c	?
Devil's Lake	12	7-8	pro.	yes	all	no	el.	yes	+	no	40	yes	all	?
Grafton	13	7-8	pro.	.....	c	no	el.	no	no	no	30	no	.....	.....
Webster	14	7-9	pro.	.....	c	no	el.	yes	+	no	40	yes	all	.....
Cincinnati, O.	15	7-10	**	.....	a	yes	el.	yes	no	no	60	yes	b c	.....
Dayton	10	9	pro.	.....	.....	.....	el.	yes	no	no	42	.....	all	.....
Muskogee, Ok.	11	7-9	pro.	yes	all	.....	h. s.	asst.	1 yr	sex	42	yes	all	.....
Curwensville, Penn.	13	7-9	pro.	yes	c	yes	h. s.	yes	+	no	45	yes	all	.....
Lansdowne	08	7-8	pro.	.....	c	yes	h. s.	yes	no	no	40	yes	all	?
Monnton	.....	7-9	pro.	.....	.....	.....	.....	.....	.....	no	40	.....	all	.....
New Kensington	14	7-9	pro.	.....	all	yes	el.	yes	no	no	50	yes	all	.....
Brookings, S. D.	13	7-9	pro.	yes	a c	no	h. s.	yes	no	no	40	yes	all	.....
Columbia, Tenn.	14	7-8	.....	yes	.....	2 yr	.....	yes	no	yes	40	yes	all	.....
Houston, Tex.	14	7-9	.....	yes	a c	no	h. s.	yes	no	no	40	no	b c	.....
Murray, Utah	14	7-10	***	.....	a c	no	.....	yes	no	no	40	no	.....	.....
Ogden	09	7-9	***	.....	a	no	.....	yes	no	no	40	yes	all	.....
Burlington, Vt.	14	7-8	pro.	.....	a	no	yes	yes	no	no	35	no	all	.....
North Troy	15	7-10	pro.	yes	c	no	yes	yes	no	no	40	no	all	?
Bristol, Va.	15	6-8	pro.	.....	c	yes	el.	yes	+	no	30	yes	all	yes
Richmond	15	6-8	pro.	.....	a	.....	.....	yes	.....	no	.....	.....	.....	.....
Roanoke	.....	6-8	***	.....	.....	no	yes	.....	.....	no	35	yes	.....	.....
LaCrosse, Wis.	14	7-8	*	yes	a	no	.....	.....	.....	no	.....	.....	.....	.....
Manitowac	13	8-9	*	.....	a	yes	el.	.....	+	no	35	yes	all	?
Rhineland	13	7-8	pro.	yes	.....	1 yr	el.	yes	no	no	40	yes	all	yes
Wis. H.S. (Madison)	11	7-9	**	.....	.....	yes	el.	no	no	no	30	.....	all	?
Diamondville, Wyo.	13	7-9	pro.	.....	c	no	h. s.	no	no	no	50	yes	.....	.....
Kemmerer, Wyo.	15	7-8	pro.	yes	c	yes	el.	no	no	no	40	.....	all	yes
Lamarie (Wyo. Univ.)	13	7-9	pro.	yes	c	no	h. s.	no	+	no	40	yes	b c	.....

SECTION 4

STATISTICS OF ENROLMENT IN JUNIOR HIGH SCHOOLS

TABLE 13

JUNIOR AND SENIOR ENROLMENT, BY GRADE, UNDER THE OLD AND UNDER THE NEW PLAN

	PRESENT JUNIOR						OLD JUNIOR						PRESENT SENIOR		OLD SENIOR	
	7th		8th		9th		7th		8th		9th		Boys	Girls	Boys	Girls
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Ft. Morgan, Colo.....	36	43	32	38	83	74	7	58	69	73	139	78	139	20	23	
Clinton, Ia.....	16	19	76	78	83	7	7	14	8	136	153	7	7	20	23	
Radcliffe.....	15	57	46	44	49	57	32	32	48	64	72	54	72	54	59	
Shenandoah.....	14	12	9	10	12	8	8	6	7	18	30	15	30	15	21	
Winfield, Ia.....	14	113	108	74	55	66	44	45	50	47	74	39	74	39	48	
E. Chgo., Ind.....	15	b&g	183	147	b&g	144	144	306	306	b&g	234	b&g	234	b&g	260	
Lafayette, Ind.....	15	55	45	34	47	54	51	60	48	107	124	100	124	100	142*	
Mt. Vernon, Ind.....	13	43	33	32	49	49	49	60	48	126	139	110	139	110	120	
Seymour, Ind.....	12	78	51	70	47	44	44	73	73	140	214	86	214	86	156	
Ark., City, Kan.....	14	80	75	80	47	44	44	75	75	126	83	55	83	55	108	
Chanute, Kan.....	15	28	29	32	.....	.....	.....	40	40	62	127	55	127	55	108	
Girard, Kan.....	13	52	40	43	.....	.....	.....	36	36	116	169	87	169	87	130	
Great Bend, Kan.....	14	13	4	12	13	9	9	8	8	29	32	20	32	20	38	
Hays, Kan.....	13	44	32	39	30	38	38	24	32	46	57	29	46	29	48	
Neodesha, Kan.....	15	70	53	66	74	72	72	68	62	151	153	144	153	144	146	
Adrian, Mich.....	14	53	54	49	67	60	60	52	50	88	113	80	113	80	97	
Austin, Minn.....	13	15	17	18	18	23	23	12	14	15	15	12	16	64	41	45
Cokato, Minn.....	12	b&g	125	116	b&g	100	100	b&g	89	89	95	74	95	74	.....
Rochester, Minn.....	12	91	118	87	83	.....	.....	89	101	63	50	.....	63	50	.....
Hackensack, N. J.....	13	27	33	25	27	22	22	20	21	17	20	15	20	15	20	71
Dansville, N. Y.....	14	4	7	6	3	4	4	6	3	4	5	2	9	5	16	17
Webster, N. D.....	13	15	17	16	18	23	23	10	15	16	14	20	19	56	40	38
Curwensville, Pa.....	13	38	27	36	32	38	38	17	19	22	20	21	25	112	127	82
Brookings, S. D.....	14	39	35	51	43	.....	.....	15	25	30	37	.....	37	17	14	18
Columbia, Tenn.....	9	298	190	197	137	158	158	188	196	143	184	89	103	299	388	307
Ogden, Utah.....	14	104	109	86	96	.....	.....	232	232	.....	.....	.....	.....	.....	.....	.....
Burlington, Vt.....	13	37	51	40	41	28	28	40	42	23	26	23	36	15	40	99
Rhineland, Wis.....	13	8	6	9	15	10	10	6	6	7	15	2	6	15	20	8
Diamondville, Wyo.....	13	8	6	9	15	10	10	6	6	7	15	2	6	15	20	8

*Includes the ninth grade.

TABLE 14

PRESENT JUNIOR AND SENIOR ENROLMENT, BY GRADE, FOR SCHOOLS ORGANIZED ON A SIX-THREE-THREE OR A SIX-SIX BASIS

	When Established	PRESENT JUNIOR						PRESENT SENIOR	
		7th Boys	7th Girls	8th Boys	8th Girls	9th Boys	9th Girls	Boys	Girls
Berkeley, Cal.....	10	315	355	244	290	217	237	562	509
Palo, Alto, Cal.....	13	40	38	39	29	28	26	92	123
Santa Rosa, Cal.....	13	76	94	72	58	72	37	141	80
Nez Perce, Idaho...	15	14	10	10	9	14	15	31	34
Springfield, Ill.....	14	101	101	72	84	71	71	.....	.....
Gas City, Ind.....	15	14	15	19	19	8	11	22	13
Hampton, Ia.....	.....	27	30	26	20	30	43	.....	.....
Madisonville, Ky.....	.....	25	29	19	21	18	20	53	40
Morganfield, Kan...	15	11	27	15	12	13	13	39	42
Kalamazoo, Mich.....	.....	213	251	199	190	81	90	317	306
Deer River, Minn...	14	11	12	9	11	7	9	.....	.....
Faribault, Minn....	13	66	56	55	68	64	85	176*	128
Gothenburg, Neb....	14	14	12	11	17	16	14	44	36
Muskogee, Ok.....	11	.....	.....	122	127	110	120	.....	.....
Lansdowne, Pa.....	08	28	35	24	32	35	36	18	15
Mohnton, Pa.....	.....	16	19	4	6	4	5	10	13
New Kensington, Pa	14	60	53	41	45	31	28	49	40
West DePere, Wis..	14	b&g	20	b&g	21	b&g	22	.....	.....
Wis. H. S.....	11	19	17	19	7	36	26	44	63
Lamarie, Wyo.....	13	9	7	7	6	12	8	22	20

*Old Senior enrolment, boys 45, girls, 76.

TABLE 15

PRESENT JUNIOR AND SENIOR ENROLMENT, BY GRADE, FOR SCHOOLS ORGANIZED ON A SIX-TWO-FOUR BASIS

	When Established	PRESENT JUNIOR				PRESENT SENIOR	
		7th Boys	7th Girls	8th Boys	8th Girls	Boys	Girls
Fresno, Cal.....	.....	190	175	222	239	455	448
Crawfordsville, Ind.....	07	44	72	49	68	157	205
Madison, Ind.....	08	34	41	31	35	74	103
Richmond, Ind.....	.....	154	133	113	108	325	343
Seymour, Ind.....	13	59	50	29	35	122	140*
Ft. Scott, Kan.....	04	100	65	40	60	190	240
Manhattan, Kan.....	14	70	60	54	58	167	176
Winfield, Kan.....	13	49	74	55	62	250	279
Paducah, Ky.....	15	79	76	74	104	169	192
Arlington, Mass.....	15	123	115	87	80	284	388
Duluth, Minn.....	13	204	187	206	200	808	907
Crookston, Minn.....	13	69	59	39	43	108	167
Hutchinson, Minn.....	13	39	30	32	28	35	20
Scotia, N. Y.....	14	37	27	19	21	67	77
Silver Creek, N. Y.....	10	15	30	22	31	40	65
Bismark, N. D.....	14	39	43	31	37	90	135
Grafton, N. D.....	13	22	19	22	25	85	100

*Senior enrolment, 1912, boys 90, girls 115.

TABLE 16

PRESENT JUNIOR AND SENIOR ENROLMENT, BY GRADE, FOR SCHOOLS ORGANIZED WITH THE EIGHTH AND NINTH GRADES COMPOSING THE JUNIOR HIGH SCHOOL

	PRESENT JUNIOR				PRESENT SENIOR	
	8th Boys	8th Girls	9th Boys	9th Girls	Boys	Girls
Evansville, Ind.....	299	212	118	115	302	356
Muskegon, Mich.....	b&g	311	b&g	216	b&g	399
San Antonio, Tex.....	241	253	132	207	.....	.....
Manitowac, Wis.....	23	37	29	41	.....	.....

TABLE 17

MISCELLANEOUS DATA ON ENROLMENT

Aurora, Ill.: Eighth: boys, 91, girls, 81; total senior, 468.

West Lafayette, Ind.: Total, junior, 170; total senior, 130.

Dayton, O.: Ninth: boys, 462; girls, 490; senior boys, 676, girls, 763.

Newton, Kan.: Eighth: boys, 59, girls, 63; senior boys, 142, girls, 199.

SECTION 5

EXTENT OF THE JUNIOR HIGH SCHOOL MOVEMENT IN THE SEVERAL STATES

This section shows the present extent of the junior-high-school movement so far as revealed by this investigation. The quotations are from statements by the various state superintendents or their representatives, and were received during the year 1915-16, unless otherwise stated. Cities taken from lists appearing in various places are recorded merely as "reported" to have junior high schools when no direct communication was received from them. This has been done because cities are often erroneously credited with possessing this form of school organization.

Alabama. "Nothing of any consequence has been done in this state in the junior-high-school movement."

Reported: Florence.

Arizona. The state department reports that agitation is just starting in favor of the junior high school.

In operation: Globe. May adopt later: Douglas, Morenci.

Arkansas. In operation: Hot Springs, Texarkana. Studying plan: Little Rock. Reported: Conway.

California. In operation: Alameda, Anaheim, Berkeley, Chico (discontinued for present), Fresno, Los Angeles, Oakland, Palo Alto, Santa Rosa, San Francisco. Reported: Pasadena, Pomona, San Diego, Santa Monica, Tulare.

Colorado. In operation: Fort Morgan, Silverton, Sterling. Will adopt later: Cripple Creek, Trinidad. Reported: Almosa, Colorado Springs, Greeley.

The Denver survey in a preliminary report recommended the junior high school. Delta will be organized in 1916-17.

Connecticut. In operation: New Britain, Norwalk, South Norwalk (partially).

It will be organized in a modified form in Danbury; in Stamford the town meeting refused to make appropriation. The Bridgeport survey (1913) recommended: "Reorganize the elementary grades so that grades I-VI constitute a unit and grades VII-VIII a unit." Grades 6-8 are now under a process of organization.

Delaware. "We have not reached the stage in our development where this differentiation is necessary or even possible."

Florida. " * * * * we have quite a number of junior high schools in Florida, but the term as used in this State does not correspond strictly with

the same term as used in other states. Our junior high school department is limited to the ninth and tenth grades. We have not yet adopted the "6 & 6" plan, strictly. The question of a different organization or division of grades has been frequently discussed in this state, but our present plan seems to be satisfactory to most of our leading educators."

In operation: Tampa. Reported: Jacksonville.

Georgia. "There are few of our school systems which have junior high schools. Nearly all of the public-school work in this state is based upon the plan of seven years of elementary work and four years of secondary training. A few schools, however, use the 8-3 and 8-4 plan and a few others, as stated before, the 6-6."

Will adopt later: Atlanta, Savannah. Reported: Macon.

Idaho. In operation: Blackfoot, Coeur d'Alene, Lewiston, Nez Perce, Pocatello (temporarily discontinued), Wallace. Reported: Burley.

The junior high school was recommended by the Boise survey and is now partially organized in that city. The department of education at the state university is very favorable to the plan.

Illinois. In operation: Aurora (East), Aurora (West), Blue Island, Cairo, Macomb, Springfield. Partially organized: Belvidere, Decatur, Quincy. Reported: Dundee.

Indiana. In operation: Anderson, Crawfordsville, East Chicago, Elkhart, Evansville, Lafayette, Madison, Mt. Vernon, Muncie, Richmond, Seymour, West Lafayette. Considering plan: Goshen, Greencastle, South Bend. Reported: Battleground, Buck Creek, Clark's Hill, Dayton, Gladdin, Jefferson, Monitor, Montemorency, Romney, Stockwell, Union City, Washington, Wea, West Point.

The department of education at the state university is furnishing literature to schools reorganizing on this plan.

Iowa. "This movement is on in Iowa but is of recent origin. This office is just now collecting accurate information from the entire state, and we shall soon be prepared to give a complete list of schools offering some form of this organization."

In operation: Cedar Rapids, Clinton, Denison, Goldfield, Hampton, Marion, Radcliffe, Shenandoah, Winfield. Sioux City is planning a junior high school; Davenport and Des Moines may adopt it later. Reported: Estherville, Holstein, Maquoketa, Sac City, Spirit City, West Bend.

Kansas. In operation: Arkansas City, Chanute, Ft. Scott, Girard, Great Bend, Hays, Hutchinson, Kansas City, Leavenworth, Manhattan, Neodesha, Newton, Salina, Topeka, Wichita, Winfield. Partially organized: Garden City. Studying plan: Eureka, Lawrence. Reported: Coffeyville, Emporia, Fredonia, Horton, Meade, Mulberry, Williamsburg.

The subject was discussed in the 1915 state-teachers' association, and in the 1916 principals' and superintendents' conference.

Kentucky. "Up to 1908, Kentucky had no high schools except in cities. The legislature in 1908 made it mandatory for each county in the State after

two years, to establish one or more county high schools in which all the pupils of the county, who are qualified to enter, should receive free tuition. There have now (1915) been established more than 200 of these schools and they are doing marvelous work. * * * * Some counties have as many as 5 or 6 of these high schools, so located as to be within easy reach of practically all the pupils in the county. The schools are of three grades, first class, doing 4 years' high-school work, second class, doing three years' high-school work, and third class, doing two years' high-school work."

In operation: Corydon, Covington, Madisonville, Morganfield, Paducah, Paris. Lexington will establish one in September, 1916.

Louisiana. "The junior high school has been discussed in Louisiana but conditions are such that there does not seem to be any demand for the establishment of such schools."

In the superintendent's report, New Orleans, 1914-15, the advisability of the plan for that city was favorably discussed.

Maine. "Several communities have reorganization plans in mind and are likely to undertake definite work in the near future. The city of Old Town has established a junior high school this year. * * * * The city of Auburn has been preparing courses with view of establishing such a school in September."

In operation: Auburn, Biddeford.

Maryland. In operation: Cumberland, Hagerstown. In Baltimore it will probably be recommended to the board of school commissioners in a modified form.

Massachusetts. In operation: Arlington, Boston, Bridgeport, Chelsea, Dudley. Partially organized: Beverly, Brockton, Clinton, Newtonville, Somerville, Springfield, Webster, West Springfield. Will adopt later: Gloucester, Holyoke. Studying plan: Lynn, Malden. Reported: Franklin, North Easton, Reading.

The superintendent in Worcester recently recommended that the junior high school be extended throughout all the elementary schools. The survey in Boston recommended that the junior high school be more completely organized than at present. New Bedford and Woburn are giving some consideration to such an organization. Waltham has had centralized grammar schools for a number of years.

The Massachusetts High School Masters' Club is making a study which will be published during the year 1916-17.

Michigan. In operation: Adrian, Grand Rapids, Kalamazoo, Lowell, Muskegon, Saginaw (East). Will reorganize soon: Bay City, Jackson, Saginaw (West). Reported: Battle Creek.

It has been recommended by the Michigan State Teachers' Association. Ypsilanti Normal College will operate a junior high school soon, and will offer special work for junior-high-school teachers. The University of Michigan

has officially encouraged the six-three-three plan, and allows graduates of the six-year high school to apply for university credit upon examination.

Minnesota. In operation: Austin, Cokato, Crookston, Deer River, Duluth, Faribault, Rochester. Partially organized: Ely. Reported: Bemed, Cloquet, East Grand Forks, Fergus Falls, Grand Rapids, Henderson, Hibbing, Howard, Montivedeo, New Ulm, Renville, Rushford, Sandstone, Villard.

As a result of the recommendations of the survey, the superintendent's office in Minneapolis is carefully considering the advisability of establishing the six-three-three plan. The department of education at the state university is preparing a bulletin on the junior high school.

Mississippi. Reports no progress.

Missouri. In operation: Hannibal, Springfield (Missouri State Normal). Reported: Excelsior Springs, Malden, Unionville.

Montana. In operation: Butte. Reported: Anaconda, Barnesville, Dillon, Recommended by the Butte survey.

Nebraska. In operation: Blair, Gothenburg, Lincoln, North Platte. Will adopt later: Norfolk. Reported: Aurora, Bankroft.

Nevada. "We have no provision here for the six-six plan as yet, and so have no Junior High School. However, the matter of organization of some of our larger high schools on that plan has been discussed somewhat, and it may be brought about in the near future."

New Hampshire. In operation: Berlin, Concord, Keene.

New Jersey. "The State Board of Education of New Jersey is urging legislation which will make possible a state-wide development of the intermediate school plan." (1914-15)

In operation: Bloomfield, Hackensack, Long Branch, Montclair, Nutley, Somerville, Trenton. Studying or experimenting with plan: Atlantic City, Bayonne, Camden, Englewood. Recommended by the East Orange, Montclair, and Nutley surveys.

New Mexico. "The Junior High School has not as yet made much progress in this state."

In operation: Santa Fe.

New York. "We are just collecting for the first time information from all our secondary schools regarding the extent to which there is variation from the conventional course beginning with the sixth grade. We shall tabulate this information a little later."

In operation: Brockport, Dansville, Rochester, Solvay, Scotia, Silver Creek. Will establish soon: Poughkeepsie, Utica. Under consideration: Hudson Falls, Malone. Reported: Dunkirk, Ellensville, Long Branch, Sommerville, Tonawanda, Troy, Wellsville.

The High-School Teachers' Association of New York City has a committee at work upon the junior high school.

North Carolina. In operation: Durham, Will adopt later: Asherville.

North Dakota. In operation: Bismark, Cando, Devil's Lake, Langdon, Webster. Partially organized: Grafton, Minot, Westhope. Reported: Beach, Cooperstown, Hillsboro, Hunter, Kensal, Lakota, Larimore, La Mourne, Page, Petersburg, Williston.

The subject was favorably considered by the fourteenth annual state high-school conference.

Ohio. In operation: Cincinnati, Cleveland, Columbus, Dayton, Madisonville. Will adopt later: East Liverpool, Hamilton, Lima, Youngstown.

The subject has several times been discussed in the State Teachers' Association meetings. It is approved by the state department.

Oklahoma. In operation: Chicasha, Hugo, Muskogee, Oklahoma City. Will adopt later: Bartlesville.

Oregon. In operation: Albany, McMinneville, Salem. Reported: Lake View, Medford, Salwin, The Dalles.

The University of Oregon will establish both a junior and a senior high school in 1916-17. Recommended by the Portland survey.

Pennsylvania. In operation: Curwensville, Ephrata, Hollidaysburg, Johnstown, Naticoke, New Kensington. Studying or experimenting with plan: Altoona, Harrisburg, Lansdowne, Philadelphia, Tyrone, Williamsport. Reported: Ambridge, Ben Avon, Erie, Marburg.

Pittsburgh University has been offering special work for junior-high-school teachers.

Rhode Island. "Do not know of any school in this state where the plan has been put in operation."

South Carolina. Little progress, if any, has been made.

South Dakota. "The following schools in this state are trying the junior high school in some form: Madison, Aberdeen, Sioux Falls, Yankton, Mitchell, Lead, and Brookings. These have not all succeeded in organizing a complete junior high school but have at least extended their departmental work to the seventh and eighth grades."

Reported: Amour.

Tennessee. In operation: Columbia, Jackson, Union City. Will adopt soon: Chattanooga. Reported: Clarksville, Gallatin.

The state department has a study of the problem under way.

Texas. In operation: Austin, Houston, San Antonio.

Utah. In operation: Murray, Ogden, Payson, Price, Salt Lake City. Reported. Park City.

Vermont. In operation: Bennington, Burlington, North Troy, Plainfield. Considering plan: Rutland. Reported: Cambridge, Lowell.

The Vermont survey recommended: "That six-year high schools be established wherever practicable, these schools to continue the work of the six-year elementary schools." The state department is now working out a course of study.

Virginia. In operation: Bristol, Richmond, Roanoke. Will adopt later: Danville.

Washington. In operation: Sumner. Partially organized: Everitt. Will adopt later: Bellingham, Walla Walla.

West Virginia. "A good many of our high schools in West Virginia are interested in the junior-high-school movement and most of our principals are making a study of the junior high school. Within a year or two quite a number of junior high schools will have been established. So far, however, junior high schools have been established only in three or four towns. Charleston has a junior high school with an enrollment of about five hundred students. It is conducted in a building of its own. This is the first year of its existence, however, and the course of study has not yet been organized on a strictly junior-high-school plan. Clarksburg and Spencer are also organizing junior-high-school departments."

Will adopt later: Bluefield, Huntington.

Wisconsin. In operation: Edgerton, Horicon, La Crosse, Manitowac, Rhinelander, River Falls, West DePere, Wisconsin High School (Univ. of Wis.)

The state department in 1914 issued a bulletin recommending the adoption of the plan and giving suggestions. The circulation department of the University of Wisconsin has been furnishing literature to the schools of the state.

Wyoming. In operation: Cheyenne, Diamondville, Kemmerer, Laramie (Univ. of Wyo.), Rawlins, Rock Springs.

Since the above section was compiled, reports have been received from additional cities, as follows:

In operation: Old Town, Me. (1915, grades 7-9); Battle Creek, Mich. (1916, grades 7-9); Malden, Mo. (1913, grades 7-9); Excelsior Springs, Mo. (1915, grades 7-9); Unionville, Mo. (1915, grades 7-8); Aurora, Neb. (1911, grades 6-8); Pittsburgh, Pa. (1914, grades 7-9).

Expect to establish later: Spokane, Wash.; Shreveport, La. (grades 7-8); Utica, N. Y.; Erie, Pa. (grades 7-9).

"The annual reports of the superintendents of Minnesota high schools for June, 1915, show that twenty-seven schools have entered upon some form of organization other than the well established plan of eight elementary- and four high-school years. Twelve of these schools are following the six-three-three plan; twelve, the six-two-four plan; and three, the six-six plan. This year about twenty additional schools are undertaking one or another of these plans of reorganization." (Phillips, E. M., and Barnes, C. H. The junior high school problem. *Bull.* No. 59, 1916. Minn. Dept. of Educ., St. Paul.)

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THE SIXTEENTH YEARBOOK

OF THE

NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART I

SECOND REPORT OF THE
COMMITTEE ON MINIMAL ESSENTIALS IN
ELEMENTARY-SCHOOL SUBJECTS

BY

H. B. WILSON, W. S. GRAY, C. F. MUNSON, J. H. HOSKINSON, F. N. FREEMAN
H. C. PRYOR, W. W. CHARTERS, W. S. MONROE, G. M. WILSON
W. C. BAGLEY, ERNEST HORN, L. W. RAPEER

Edited by GUY M. WHIPPLE, Secretary

This Yearbook will be discussed at the Kansas City Meeting of the
National Society, Monday, February 26, 1917, 8:00 P. M.

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS

1923

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Published February, 1917

First printing 3000
Second printing 1000, 1918
Third printing 1000, 1920
Fourth printing 1000, 1923

Composed and Printed by
The Public School Publishing Company
Bloomington, Illinois

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This Yearbook is the 1916 report of the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education.

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EDITOR'S PREFACE

The publication of the first report of the Committee on Minimal Essentials in Elementary-School Subjects as Part I of the *Fourteenth Yearbook* of the Society and the publication of the report of the Committee on Standards and Tests as Part I of the *Fifteenth Yearbook* met with such welcome as to indicate that this method of disseminating the reports of important committees in advance of the meetings at which they are to be discussed was endorsed both by members of the Society and also by large numbers of the educational public who purchase single copies of various parts of our publications through commercial channels. The present Part I of the *Sixteenth Yearbook* will be appreciated, we hope, as evidence of the continuation of the policy just mentioned. It appears not unlikely that other committees and organizations of men professionally active in various aspects of educational endeavor will be glad to make similar use of the Society's avenues of publication in the future.

G. M. W.



CHAPTER I

INTRODUCTION

HARRY B. WILSON

Superintendent of Schools, Topeka, Kan.

This monograph contains the second printed report of the Committee¹ of the Department of Superintendence on Economy of Time in Public Education. The first report was issued as the *Fourteenth Yearbook of the National Society for the Study of Education, Part I*, under date of 1915, and was the subject of discussion at one session of the National Society for the Study of Education and occupied one half-day session on the Department of Superintendence program at the meeting of the Department at Cincinnati, in 1915.

Interest in the report on Minimal Essentials at the time of its presentation and further interest² in the same, as evidenced by

¹The Department Committee was first created in response to a resolution offered by Professor Suzzallo at the Department meeting at Mobile calling for a committee from the Department to coöperate with the Council Committee on Economy of Time in Education. The committee as originally appointed by Superintendent C. E. Chadsey, then President of the Department of Superintendence, was as follows: Calvin N. Kendall, Indianapolis, Chairman; John H. Francis, Los Angeles; E. O. Holland, Louisville; C. S. Meek, Boise; F. E. Spaulding, Newton. The committee was gradually changed, by resignations and by the addition of members, until it came to be organized as it now stands: Harry B. Wilson, Topeka, Chairman; John H. Francis, Columbus; Frank E. Spaulding, Minneapolis; Frank E. Thompson, University of Colorado; O. I. Woodley, Marshall College; J. F. Bobbitt, University of Chicago; V. A. C. Henmon, University of Wisconsin.

²Three states—Minnesota, Iowa, and North Dakota—have been at work in an effort to determine the eliminations which should be made from the subjects of the elementary curriculum and to formulate the content of each subject of study in the elementary curriculum. In March, 1914, the Department of Education of the State of Minnesota issued *Bulletin 51*, which was a report of the Committee on the Elementary Course of Study to the Minnesota Educational Association. In November, 1915, a committee of the Iowa State Teachers' Association made a report on the *Elimination of Obsolete and Useless Topics and Materials from the Common Branches*, and again in November, 1916, a similar committee issued a positive program of recommendations with reference to the essentials of the subjects of the elementary curriculum.

correspondence and the sale of the *Yearbook* since that time (2165 had been sold in June, 1916), together with our own conviction that the first report was essentially preliminary, led us to the unanimous conclusion that a further report on Minimal Essentials should be made before attention was turned to a consideration of other means of economizing time. While it was hoped to complete the additional statement on Minimal Essentials one year ago, it was found impossible to finish the investigations with sufficient care within that time.

Further report is made here on every subject treated in Part I of the *Fourteenth Yearbook*, and in addition, a preliminary report is presented on Physical Education. Reports on Music, Drawing, and Elementary Science are also in process of preparation, but could not be completed in time for inclusion with this formulation.

The following reports are concerned primarily with the social value of the content as a basis for instruction in the subjects treated, but the relation to economy of time of the reduced content is indicated where possible. It is believed that economies will result not only by reason of the reduced content, but also by reason especially of the vital functional character of the content, making possible greater interest and larger motive for its mastery.

The Committee and Coöperating Investigators are agreed that the guiding principles for determining the Minimal Essentials in the Elementary-School Subjects as stated in the *Fourteenth Yearbook, Part I*, are sufficiently satisfactory that a reformulation of them is unnecessary here. They recognize, of course, as do a number of the formulations following in this report, that the details of the minimal essentials will vary according to the particular outcome or outcomes of elementary education which are emphasized.

Following the Introduction; Chapter I, there are ten chapters presenting reports on reading, handwriting, spelling, grammar, arithmetic, history, and physical education.

A committee of seven on "Adjustment of Educational Work with Reference to the Needs of the Times," created by the North Dakota Educational Association, issued reports in 1908, 1909, and 1911, which, while not resulting from the work of the Department Committee, are worthy of attention in any effort to determine the minimal essentials in elementary-school subjects.

Chapters II and III deal with reading. In Chapter II, on Silent Reading, Mr. Gray discusses the importance and economy of silent reading in elementary school instruction. He sets forth statistically the greater use and value of silent reading as compared with oral. The study shows the grades in which the greater emphasis should be placed upon training children in silent reading and criticizes the reading texts in use at the present time from the standpoint of the omission of graded material adapted to the development of silent-reading ability. It also suggests the type of material which should be provided from grade to grade in developing ability in silent reading and also the methods to be employed in using the types of material suggested in developing silent-reading ability. Chapter III reports the results of an investigation by Mr. Munson and Mr. Hoskinson made for the purpose of determining the prevailing practice regarding the use of library and supplementary-reading books in the different grades of the elementary schools in fifty American cities, representing different sections of the country and school systems of different sizes. The library books and supplementary readers are listed separately by grades. All books were eliminated which were recommended fewer than five times. The total books listed are 817 library books and 95 supplementary readers, making a total of 912 books.

Chapter IV, on handwriting, is an addition to the report of two years ago on the same subject by Mr. Freeman. Upon the basis of the scoring by a trained grader of the papers from one school in each of the 55 cities studied two years ago, the writer discusses general variations in practice and the significance of these variations for the problem of economy. The general conclusion is reached that at least a quarter of the children from the sixth grade up have, under present conditions, sufficient skill in writing to make it more profitable for them to spend the handwriting time either in perfecting some other formal subjects in which they are deficient or in studying some content subject. It is suggested that there are reasons for believing that even a larger proportion of pupils than one-fourth may be expected to eliminate themselves from the formal handwriting class in the grades above the fifth. The results of one study of the effect of different time allowances are presented with

the idea primarily of suggesting to others the trial of a similar experiment. The one experiment shows that the pupils who spent fifty minutes per week made as much gain as those who spent twice as much time.

In Chapter V, Mr. Pryor, who discussed the Minimal Content and Time in Spelling in the report of this Committee two years ago, presents the results of his investigations to determine definitely what and how many words should be included in a minimal spelling list. His report indicates the twelve lists which were examined in determining the list presented and shows the method by which the words in the suggested list were determined. A total of 1,479 words, distributed throughout the grades from the second to the eighth, inclusive, is presented.

The Minimal Essentials in Elementary Language and Grammar are discussed in Chapter VI. After suggesting the five points of view from which the minimal essentials may be attacked, the report presents a descriptive view of several studies of the language errors of children, eight of which deal with oral errors and four with written errors. The aim of this report is to describe and illustrate a method of constructing a grammar curriculum on the basis of the errors of children. The studies directed by Mr. Charters himself are discussed and described in greater detail than the other studies mentioned. Upon the basis of the errors discovered in the writing and speaking of the children in the schools studied by him, the facts were determined which must be taught in order that the pupils may correct errors in their speaking and writing. These facts are arranged in a grammar curriculum.

Chapters VII and VIII are concerned with arithmetic. In Chapter VII, Mr. Monroe shows that materials selected for the course in arithmetic will vary according to the purpose of teaching arithmetic. After defining the guiding aim in arithmetic, the author proceeds to a study of several much-used texts in arithmetic, with a view to compiling a list of the arithmetic problems which arise in human activities and which possess a sufficient degree of utilitarian or socializing value to justify their being designated as minimal essentials in realizing the purpose in teaching arithmetic. The type of problem which is considered valuable and useful is

illustrated, as is the type which is considered not essential. The results of applying the standard and classification to four arithmetic texts are given in tabular form. Chapter VIII presents a survey of social and business usage as a basis for determining the amount of arithmetic needed in the actual affairs of social and business life. The investigation gathered 5036 problems actually solved by 456 different persons living in 18 different cities. It was found that the problems throughout were brief and simple, requiring chiefly the more fundamental and more easily mastered processes. But few problems of an abstract nature were reported. This study by Mr. G. M. Wilson indicates that, aside from the drill processes necessary to the mastery of the fundamental operations, the teaching of arithmetic should be organized about a series of large problems concerned with fundamental human interests,—problems that the pupils will later need to solve in the actual business and social affairs of life. The study seems to warrant the conclusion that the necessary work in arithmetic can be mastered in much less time than is now ordinarily devoted to it.

Chapters IX and X are concerned with the Minimal Essentials in American History. In Chapter IX, Mr. Bagley presents the results from the completion of the study projected in his preliminary report in the *Fourteenth Yearbook* two years ago. For the details of methods and materials in reaching his conclusions, the reader is referred to *Bulletin 16 of the School of Education, University of Illinois*. This report confines itself to a summary of the names and topics that were found to be common to all of twenty-three books, together with additional names and topics common to at least three-fourths of the books. Some topics not found in three-fourths of the books are also included. Chapter X attempts to determine whether the present content of American history is satisfactory if an important purpose in teaching history is to make pupils more “intelligent with respect to the more crucial activities, conditions, and problems of present-day life.” The method of attacking this problem is clearly set forth by Mr. Horn and the conclusion is reached “that the present elementary and high-school courses of study in history are in very serious need of reconstruction from the standpoint of this aim in teaching history.”

Chapter XI presents a report on Physical Education, a subject not included in the Committee's report in the *Fourteenth Yearbook*. This formulation by Mr. Rapeer defines physical education, suggests its aims, discusses its needs and utility, and shows the relation of physical education to other phases of school activity. It presents certain essentials of physical education which have been selected by unscientific experience but endorsed by leaders in the field, and suggests a tentative scale for measuring children for health and general physical development. The report frankly recognizes that no satisfactory scale is yet available for measuring physical efficiency, and maintains that no minimal essentials can yet be scientifically determined.

With our present knowledge of social needs and of the subject matter which should fit our pupils to go forth to do the world's work so equipped as reasonably to meet these needs, your Committee feels that the following statements go about as far as is now possible. These formulations will be suggestive and influential in determining practice. Ways should be found of evaluating the results of the best types of practice as they take form from time to time. Within a few years, another statement³ on Minimal Essentials

³In addition to this report and the one of two years ago, the Committee has made statements of progress from time to time through its chairman and other members. See *N. E. A. Proceedings* 1912, p. 510 ff.; *N. E. A. Proceedings* 1913, p. 217 ff.; *N. E. A. Proceedings* 1914, p. 206 ff., and p. 390 ff. From the inception of its work, the Committee has had no thought of issuing reports or statements which were merely a compilation of opinions. Their earliest effort consisted in enlisting the cooperation of a number of persons who were interested in various phases of the problems of Economy and Efficiency, who possessed such institutional relations as made it possible for them, by reason of their training and work, to undertake the careful direction of fundamental investigations of such problems as they might become responsible for from time to time. As a means of developing a working point of view and of determining the lines of procedure and of parceling out the work, a meeting has been held in the month of November each year, beginning with 1913, by the Department Committee and Coöperating Investigators. At these meetings, also, reports of progress were made by the investigators having problems in charge, that such criticism as they should have might be made. Except for criticism of this type, the report by each investigator has been published as completed, the investigator alone being responsible for the form and content.

Persons who have assisted your Committee in this cooperative relation are as follows: Dr. Lenoard P. Ayres, Russell Sage Foundation; Director W. C. Bagley, University of Illinois; Professor W. W. Black, Indiana Uni-

should make further recommendations possible. Your Committee hopes to find some way of issuing the reports in Drawing, Music, and Elementary Science, which are still in process of development. There is need, also, of treatment of the subjects of cooking, sewing, manual training, and other forms of hand work.

At a meeting⁴ in November, 1916, held in Chicago by the Department Committee and Cooperating Investigators, it was determined that the following large problems should be attacked next in the interest of furthering the program with reference to economy and efficiency: (1) The Problem Organization of the Curriculum and the Problem Attack in Teaching, with Particular Reference to the Scope and Limitations of the Problem as a Basis for Organization and Teaching; (2) The Outcomes of Elementary Education which Should Result from Successful Instruction Based upon the Minimal Essentials of the Curriculum. The first problem is very closely related to the one which has been dealt with in the reports on Minimal Essentials. The task involved in this problem is that of turning about upon the minimal essentials with a view to organizing the same, so far as is possible in each of the various subjects of study, into that series of problems which constitutes the whole of

versity; Professor Samuel W. Brown, Ohio State University; Dean Otis W. Caldwell, University of Chicago; Dean W. W. Charters, University of Missouri; Dean L. D. Coffman, University of Minnesota; Mr. S. A. Courtis, Supervisor of Educational Research, Detroit; Mr. Arthur W. Dunn, Specialist in Civic Education, United States Bureau of Education; Professor Frank N. Freeman, University of Chicago; Professor David R. Gebhart, Peabody College for Teachers, Nashville; Dr. W. S. Gray, University of Chicago; Professor Henry W. Holmes, Harvard University; Dr. Ernest Horn, University of Iowa; Professor J. F. Hoscic, Chicago Normal College; President W. A. Jessup, University of Iowa; Superintendent R. G. Jones, Rockford, Illinois; Director Charles H. Judd, University of Chicago; Professor Walter S. Monroe, State Normal School, Emporia, Kansas; Professor Hugh C. Proyor, University of Colorado; Professor Louis W. Rapeer, Pennsylvania State College; Dr. C. W. Stone, State Normal School, Cedar Falls, Iowa; Professor George D. Strayer, Columbia University; Principal J. W. Withers, Harris Teachers College.

⁴Although your Committee has held four meetings in Chicago, attended by from eighteen to twenty-five people, all of these meetings have been held without any expense whatever to the National Education Association; those attending have defrayed their own expenses, oftentimes by taking speaking engagements en route.

the content of each subject, and then of indicating the procedure in instruction upon the basis of this problem organization.

Other problems of large and vital importance in relation to economy and efficiency are numerous. Their treatment should be attempted as quickly as persons can be interested who will attack them fundamentally and scientifically.

(Signed) H. B. WILSON, *Chairman.*
JOHN H. FRANCIS,
FRANK E. SPAULDING,
FRANK E. THOMPSON,
O. I. WOODLEY,
J. F. BOBBITT,
V. A. C. HENMON,
Committee.

CHAPTER II

THE RELATION OF SILENT READING TO ECONOMY IN EDUCATION

WILLIAM S. GRAY

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Economy of time and effort in education depends in a large measure upon the fulfillment of the following conditions: (a) that there be concentration of attention upon those phases of instruction which are highly important; (b) that each phase of instruction be emphasized at that stage in the development of the child when such instruction will be most effective, and (c) that the subject matter and methods of instruction be selected upon the basis of well-defined and highly desirable purposes which are to be realized. In harmony with these prerequisites of economy in education it is the purpose of this article to discuss the importance and economy of silent reading in elementary-school instruction, to formulate a tentative answer in regard to the periods at which instruction in silent reading may be emphasized effectively, and to outline certain conclusions concerning the subject matter and methods of teaching which are most appropriate for instruction in silent reading.

THE IMPORTANCE AND ECONOMY OF SILENT READING

Silent reading is a tool of first importance in the acquisition of ideas. In the primary grades of the elementary school special emphasis has usually been given to oral reading. This type of reading proves to be appropriate and economical during that period in which the pupil is mastering the fundamental steps in reading. The pupil soon learns, however, to use reading as a means of securing ideas for himself and he substitutes silent study for oral reading. In most of the grades of the elementary school the progress of a pupil depends largely upon his ability to acquire ideas rapidly and effectively from the printed page. The pupil who does this inde-

pendently usually advances rapidly while the pupil who reads slowly and ineffectively is often retarded. Furthermore, in most ordinary situations of life one reads silently for the purpose of gathering ideas and not for the purpose of oral exhibition. With this recognition in mind of the great importance of silent reading, we may conclude with confidence that it should receive considerable attention in elementary-school instruction.

Silent reading is a more rapid process than oral reading. The characteristic which distinguishes oral from silent reading, is, of course, the fact that words are pronounced audibly in oral reading. This characteristic of oral reading necessarily limits its rate, since oral reproduction cannot be carried on more rapidly than the vocal cords can react. A number of investigations have been made to determine the rates at which oral reading and silent reading proceed. Most of these studies give evidence of the superior speed of silent reading.

Oberholtzer (*Elementary School Journal*, 15: February, 1915, 313-322,) reports the results of an investigation with 1800 pupils in Grades III-VIII to determine the speed of oral reading and of silent reading. The results in terms of the number of words per second are presented in the following table.

COMPARISON OF RATES OF ORAL READING AND SILENT READING

GRADE	ORAL READING	SILENT READING
3	2.1	2.3
4	2.3	2.6
5	2.4	3.1
6	2.8	3.9
7	3.1	4.7
8	3.9	4.8

These figures show clearly that silent reading is a much more rapid process than oral reading and that the increase in the intermediate grades is much more marked in silent than in oral reading. This is true even in those schools where oral reading has been exclusively emphasized.

Mead (*Journal of Educational Psychology*, 6: 1915, 345-348) reports the results of an investigation with 100 6th-grade pupils.

Mead found that all classes but one read more rapidly when the reading was done silently. Pintner (*Journal of Educational Psychology*, 4: 1913, 333-337) reports the results of an investigation with 23 4th-grade pupils. Pintner found that these pupils averaged 20 lines a minute orally and 28 lines a minute silently. Judd (*Measuring the Work of the Public Schools*) reports the average number of lines read per minute orally and silently in each grade in 44 schools. This investigation, in harmony with the studies already referred to, gives convincing evidence that silent reading is a more rapid process than oral reading.

Comprehension is usually greater in silent reading than in oral reading. It has frequently been argued that oral reading is more effective than silent reading because the reader secures impressions through the ear as well as through the eye. Investigations which have been made along this line give evidence, however, of the superiority of silent reading. Mead¹ found that reproductions were slightly superior in all 6th-grade classes tested when the reading was done silently. Pintner² reported that 4th-grade children reproduced 34 per cent. of the points when reading orally and 40 per cent. of the points when reading silently.

Pintner and Gilliland (*Journal of Educational Psychology*, 7: 1916, 201-212) extended the scope of the studies reported above and obtained results for different grades in the elementary school, for the high school, and for college students. Their conclusions were as follows:

It does not seem to make much difference whether a child in the third grade reads aloud or silently. He gets about the same number of ideas per second either way. As we progress through the grades and up into college we find that it takes comparatively longer and longer for reading aloud and this increased time may result in an increase in the number of ideas reproduced. But this number of ideas gained is not nearly commensurate with the extra time expended. The silent reading of the adult is quicker than the oral reading and at the same time the number of ideas remembered is slightly greater, certainly much greater per unit of time. Thus it would appear that silent reading is undoubtedly the more economical besides being the method best adapted to the ordi-

¹*Loc. Cit.*

²*Loc. Cit.*

nary activities of life, since the vast majority of our reading is silent. This being the case, we are forced to raise the pedagogical question and ask why it is that so much more attention is given to oral reading than to silent reading in our schools.

These results lead to the conclusion that silent reading is more effective than oral reading. When we take into consideration the greater amount of subject matter read silently per unit of time, the argument is decidedly in favor of silent reading.

The rapid reader is usually more efficient than the slow reader. Pupils in the elementary school are frequently urged to read slowly in order that they may read more effectively. Various positions have been taken by investigators in regard to this problem. Quantz (*Psychological Review Mon. Suppl.*, Vol. II, No. 1, 1897) found that the rapid readers were on the average about 37 per cent. superior to the slow readers in the quality of their work. "The superiority of the rapid reader is also shown by the fact that his memory of the substance of his reading is more exact than that of the slow reader. He introduces only two-thirds as many thoughts not found in the original selection." Waldo (*Tests in Reading in Sycamore Schools*, University of Chicago, July, 1914) plotted the correlation between speed and comprehension for several grades. His conclusions were as follows: "No definite results can be stated, though it would seem that the rapid readers usually are strong in comprehension, although there are many exceptions." Hendricks (*A Study of Reading*, Silver Burdett and Company, 1911) shows distinct positive correlation between speed and quality of silent reading. "In the percentage of thought reproduced the rapid readers excel, giving 91 per cent of the thought as compared with 76 per cent reproduced by the slow readers." Judd (*Measuring the Work of the Public Schools*) reports the following conclusions based on a study of 1,831 pupils. "These figures serve to emphasize the fact that good readers are usually not slow and poor readers are usually not fast."

The discussion thus far has pointed out the facts that silent reading is of first importance both in regard to progress in school and in regard to the affairs of adult life, that silent reading is usually more rapid and effective than oral reading, and that the rapid reader is usually more efficient than the slow reader. These facts justify the conclusion that the school should give serious considera-

tion to the problem of developing effective habits of silent reading. This conclusion presents the question: At what time should definite instruction be given in silent reading? It is the purpose of the next section of the report to give a tentative answer to this question.

APPROPRIATE PERIODS FOR EMPHASIS ON SILENT
READING INSTRUCTION

Economy in education requires that silent reading be emphasized at those periods in the development of the child when such instruction will be most effective. In order to have objective evidence upon which to base conclusions concerning the location of appropriate periods, the results of several investigations of achievement in oral reading and in silent reading will be presented. Only those phases of the investigations will be discussed which bear directly on the problem under consideration. A discussion of growth in oral-reading ability is included because reading instruction in the lower grades is largely oral and because the development of ability in silent reading is intimately related to the development of oral-reading ability.

The subject matter used in these investigations consisted of the Standardized Oral-Reading Paragraphs and the Silent-Reading Tests³ designed by the writer. The oral reading test consisted of a series of paragraphs arranged in the order of increasing difficulty. Pupils were tested individually and the following facts recorded for each paragraph read: the time required to read and the number of errors which were made. The errors recorded were of the following types: mispronunciations, omissions, insertions, repetitions, and substitutions. By means of a system of scoring based upon rate of reading and the number of errors made, it was possible to express the total achievement of a pupil or of a class in numerical terms. The silent reading tests consisted of three selections, the first of which was adapted to the reading capacity of 2d and 3d-grade pupils, the second to 4th, 5th, and 6th-grade pupils, and the third to 7th and 8th-grade pupils. The tests were given individually and the rates recorded. The pupils were then asked to

³Standard reading tests. *Elem. Sch. J.*, Feb., 1916.

reproduce what they had read and to answer ten questions concerning specific points of the subject matter. The average of the reproduction grade and the grade for questions answered was adopted as the quality or comprehension score.

Oral reading ability improves rapidly during the lower grades and improves steadily, but less rapidly, during the intermediate and grammar grades. The oral reading scores for 2,193 pupils of Cleveland, for 4,066 pupils of Grand Rapids, for 10,526 pupils of St. Louis, and for 1,983 pupils of eleven cities of Northern Illinois are presented in Fig. 1. A word of explanation is necessary in order that the diagram may be readily understood. Ability to read a certain paragraph means less on the part of a pupil in the upper grades than in the lower grades. Grades will have to be compared with each other by representing different levels of expectation. These different levels are represented in the diagram by the relative position of the vertical lines. Each vertical line represents the scale for a grade and begins below at a point where a score of 10 should be recorded and ends above at the point where a score of 70 belongs. The oblique lines near the middle of the diagram represent the average scores for the cities mentioned above.

The diagram shows that oral reading ability starts at a low level in the 1st grade, increases rapidly during the 2d and 3d grades and continues to increase gradually throughout the intermediate and grammar grades. An analysis of the amount of improvement from grade to grade shows that the increase in ability between grades is approximately as follows: between the first and second, 20 units; between the second and third, 7 units; between the third and fourth, 6 units; and between each of the remaining grades, 5 units. These facts indicate clearly that the first three grades represent a period during which pupils increase most rapidly in oral reading ability. These results are in harmony with natural expectation. The pupil at this time is devoting a great deal of time to the acquisition of reading habits. Every lesson brings him in contact with many new words, and he has abundant opportunity to associate the sight of symbols with their proper pronunciation. Furthermore, the power of word analysis develops so rapidly during the second and third grades that by the beginning of the fourth

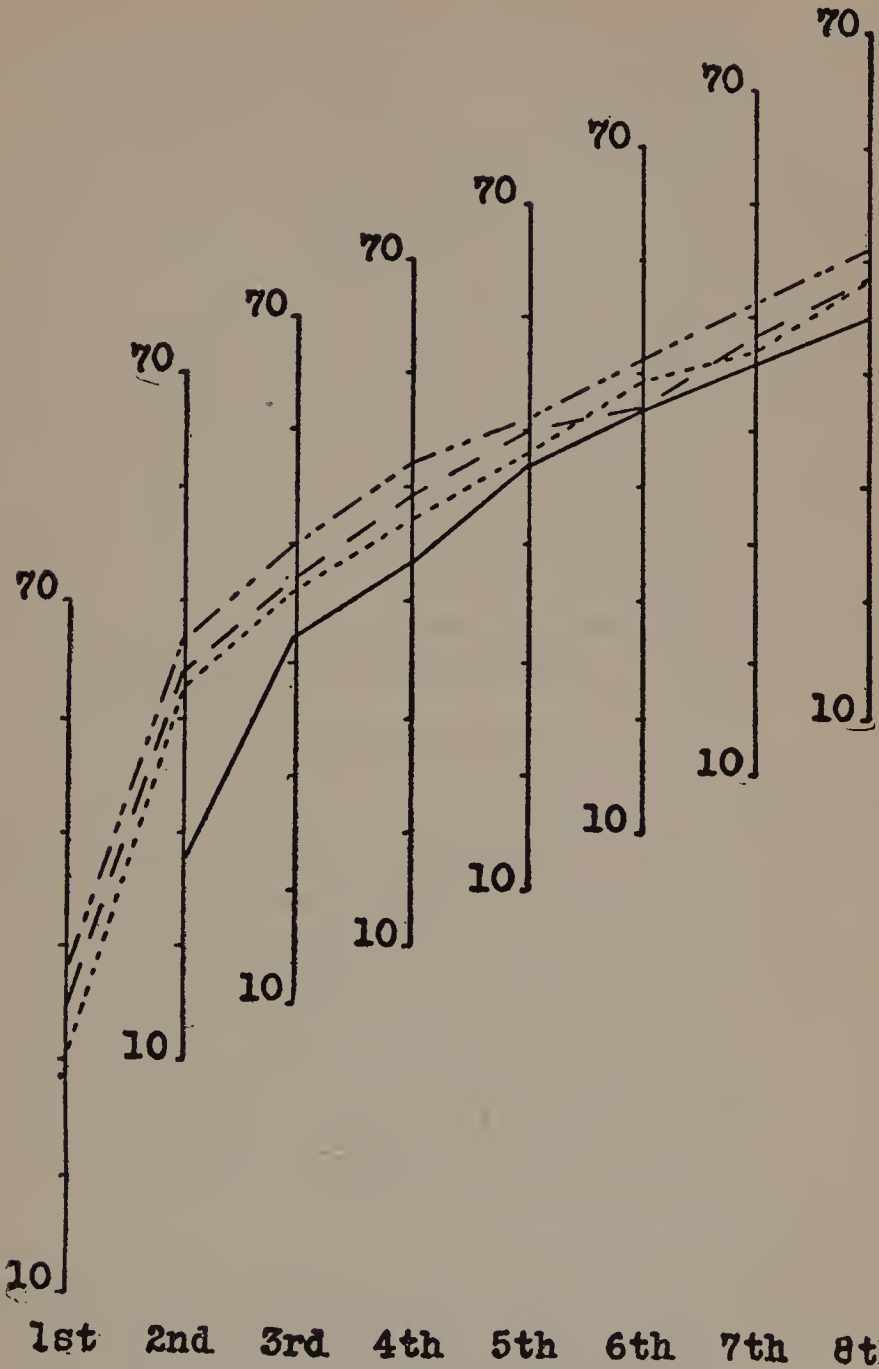


FIG. 1. PROGRESS IN ORAL READING ABILITY

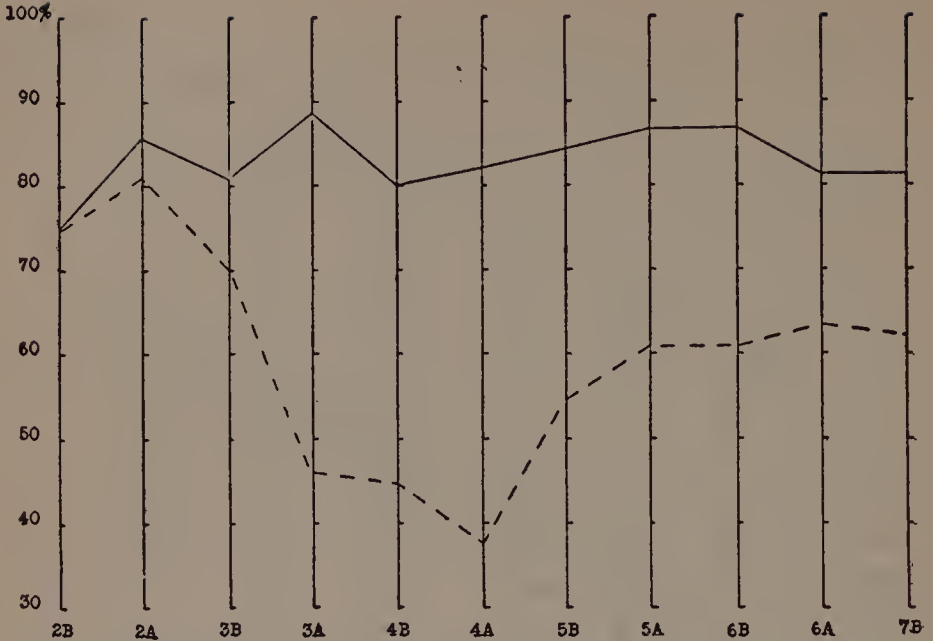


FIG. 2. COMPREHENSION SCORES FOR EASY AND FOR HARD PARAGRAPHS.

grade the pupil is able to pronounce at sight most of the words in common usage.

During the intermediate and grammar grades, pupils continue to make progress in oral reading ability. The subject matter which the pupil reads brings him in contact with many new words. In order to get the meanings of these words and to use them in class discussion, the pupil is continually analyzing or looking them up in the dictionary. Furthermore, the pronunciation of partly familiar words becomes more rapid and accurate, and the words of a selection are grouped in thought units more effectively. These facts lead to continuous progress in oral reading during the intermediate and upper grades, although this progress is by no means so rapid as in the lower grades.

Mastery of the mechanics of reading may be acquired more rapidly than ability to get the meaning of what is read. The question has frequently been raised: is it possible to develop so rapidly in ability to pronounce words that a pupil is able to read orally subject matter which is beyond his comprehension? The following

investigation furnishes a tentative answer to this question. During the winter of 1914, the oral-reading test was given to more than 300 pupils of an elementary school. Four questions were prepared for each paragraph, which after some experimentation, were approximately of equal difficulty. The pupils read the successive paragraphs of the test according to the usual directions. After the reading of each paragraph, the pupil was asked the questions which belonged to that paragraph. A grade of 25 per cent was given for each correct answer and a grade of $12\frac{1}{2}$ per cent for each partial answer. A record was made of the average comprehension score of the pupils of each class for the first selection of the test and the average comprehension score for the hardest selection which each pupil read successfully. Fig. 2 gives the results. The vertical lines represent the scales for the various grades. The numbers at the left of the diagram represent the comprehension scores. The solid line from grade to grade gives the average comprehension scores for the easiest selection which was read, and the broken line gives the average comprehension score for the most difficult paragraphs which were read successfully.

The diagram shows that the average comprehension scores for the easiest paragraph were approximately equal for the different grades. This is easily explained by the fact that the words of this paragraph were simple, familiar words, and that the meaning was recognized as quickly as the words were pronounced. The comprehension record for the second grade on the hardest paragraph which was read successfully drops very little below the comprehension record for the easiest paragraph. This is explained by the fact that, although the pupil makes rapid progress during this grade in ability to pronounce words, he does not encounter many words whose meanings are not already familiar to him because of their frequent use in every-day conversation. During the 3d and 4th grades, the comprehension scores drop surprisingly. The continued rapid progress in oral reading during these grades causes the pupil to encounter a large number of new words whose meanings have not been mastered. During the next three grades, the pupil reads widely. His world of meanings enlarges. He becomes more highly trained in discovering meanings from the context. Hence we note

that the comprehension record improves gradually during these grades.

The foregoing discussion emphasizes the fact that during the 3d and 4th grades the pupil develops so rapidly in ability to analyze and pronounce words that his ability to interpret what he reads lags behind. The results of this study suggest the desirability of giving somewhat less emphasis to pronunciation and word analysis during these grades and of giving greater emphasis to the content side of reading.

Rate of silent reading increases rapidly during the lower grades and approximates a maximum in the upper grades. Fig. 3 presents the average rates of silent reading for 1,831 pupils of Cleveland, for 8,928 pupils of St. Louis, for 2,654 pupils of thirteen cities of the Central States, and for 1,983 pupils of eleven cities of Northern Illinois. Since three selections were used in the silent-reading tests, two readjustments have been necessary in the diagram. The points of these readjustments are between the 3d and 4th grades and between the 6th and 7th grades. Broken vertical lines are drawn at each of these two points. The numbers at the left of the figure indicate the number of words read per second

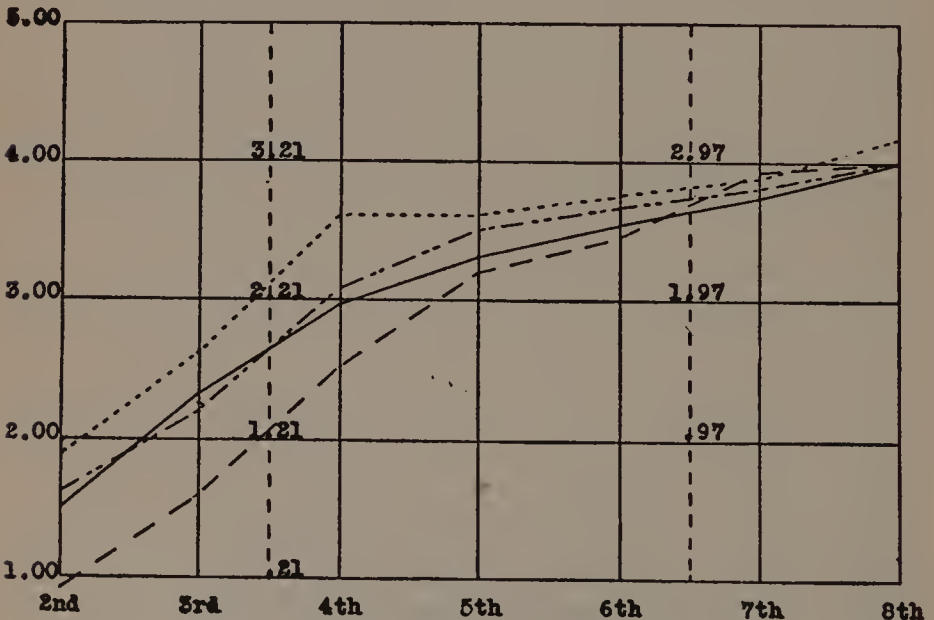


FIG. 3. PROGRESS IN RATE OF SILENT READING

when the easiest selection was read. The numbers on the line between the 3d and 4th grades indicate the equivalent number of words read per second when the second selection was used, and the numbers on the line between the 6th and 7th grades indicate the equivalent number of words read per second when the most difficult selection was used. The oblique lines across the middle of the diagram represent the average rates of silent reading for the cities mentioned above.

Fig. 3 reveals the fact that progress in rate of silent reading is most rapid during the 2d, 3d, and 4th grades. Progress continues in the upper grades of the elementary school, although this progress is not marked beyond the 6th grade. These facts harmonize with the conclusions reached by Courtis and others that a pupil's habits in regard to rate of careful silent reading are established for the most part by the end of the 6th grade. It is evident, therefore, that the 3d, 4th, and 5th grades represent a period in which rate of silent reading may be emphasized to advantage. Furthermore, it should be noted that the pupils of different schools approximate in the upper grades the same average ability in rate of silent reading, although they may differ widely in this regard in the lower grades. Since silent reading is the chief means by which a pupil secures ideas for himself during the intermediate grades, it stands to reason that the school which attains a relatively rapid rate in the lower intermediate grades, will have a distinct advantage, other things being equal, over the schools which do not attain an equal rate until the 6th or 7th grades. Economy in education demands, therefore, that effective habits of silent reading be acquired as early in the school life of the child as possible.

A second point which should be considered is that the cities included in these investigations vary more widely in rate of silent reading than in oral-reading achievement. This may be explained in part by the fact that the technique of teaching oral reading has received intensive study for generations. As a result, elaborate systems of teaching beginners in reading have been developed. The details of these systems have been worked out so carefully that the work for each year, month and week has been definitely outlined. When large numbers of teachers follow these suggestions consist-

ently, it is not very surprising that the pupils approximate the same levels of achievement. In the case of silent reading, however, very little attention has been given to the problem. Few methods for securing effective results have been worked out and generally adopted. As a consequence, teachers devote very little time to specific instruction in habits of silent reading. The wide variation in results, particularly in the lower grades, suggests the necessity of giving special attention to methods of teaching silent reading until a series of exercises has been worked out for securing effective results.

Ability to comprehend the meaning of what is read improves steadily throughout the grades. Figure 4 presents the average quality scores in silent reading for 8,928 pupils of St. Louis, for 1,831 pupils of Cleveland, and for 2,654 pupils of thirteen cities. Readjustments have been made in it similar to those in Fig. 3. The figure shows that progress in ability to secure meaning from the printed page is made throughout the grades, that the progress is less marked in the lower grades and more marked in the upper grades. Rapid improvement in quality of silent reading at the outset is due to the fact that pupils rapidly acquire skill in using reading as a tool for securing ideas. Habits of attention are developed rapidly and methods of study are constantly refined. During the intermediate and grammar grades a pupil reads widely and with a purpose. The result is that his world of meanings is greatly enlarged. Furthermore, habits of study are constantly improved so that the pupil reads with increasing effectiveness.

A second point revealed by Fig. 4 is that pupils of different cities vary widely on the average in their ability to comprehend what they read. These variations may be due to a number of factors, one of which will be mentioned at this point. Schools consciously or unconsciously emphasize certain phases of instruction more than others. Some schools emphasize the mechanical phases of reading at the sacrifice of an intelligent grasp of the meaning. Other schools reverse the emphasis. The result is that pupils differ widely in their ability to secure the meaning of what they read. Economy in education demands that the relative importance of

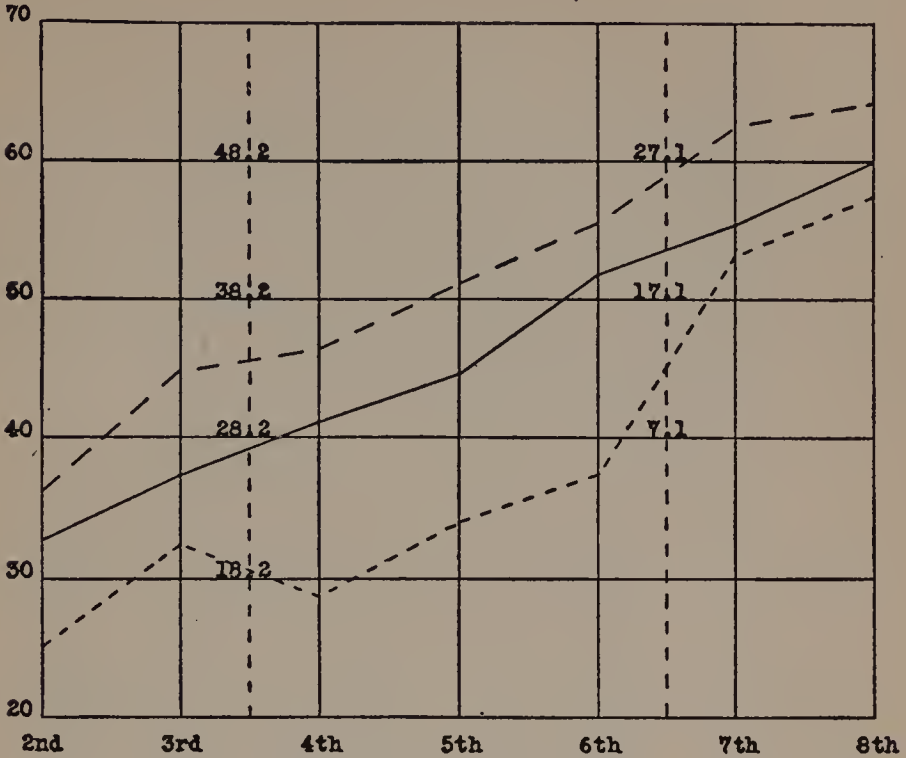


FIG. 4. PROGRESS IN QUALITY OF SILENT READING

various phases of instruction should be carefully considered and that emphasis should be placed where emphasis is most needed.

Rate and quality of silent reading may be improved through training. Waldo (*Elementary School Journal*, 15: 1915, 251-268) reports the improvement during six months of rate in silent reading in all grades from the 3d to the 8th, inclusive, as follows:

PER CENT OF INCREASE IN READING RATE

GRADE	FALL RATE	SPRING RATE	PER CENT OF INCREASE
3	76.4	149.1	95.2
4	92.7	163.3	76.1
5	113.0	129.2	14.3
6	128.0	130.1	1.2
7	122.7	142.8	16.4
8	147.2	158.9	8.0

His conclusions are: "These figures show that the lower grades are very important in the development of reading. The 3d and 4th grades nearly doubled their rate from September to March."

Uhl carried on investigations at the Oshkosh Normal School during the summer of 1916 to determine if ability to comprehend what was read could be improved. The pupils were first tested with Kelley's silent-reading test. The members of the classes were then given various exercises which were calculated to improve their ability in comprehension. The pupils were tested again at the end of four weeks and the results are recorded below. The table shows clearly the influence of training.

INFLUENCE OF ONE MONTH'S DRILL ON COMPREHENSION

GRADE	STANDARD	SCORE	SCORE
	SCORE	FIRST TEST	SECOND TEST
IV	9.9	4.2	7.7
V	13.7	10.3	14.6
VI	13.4	8.9	15.4
VII	16.5	12.8	15.8
VIII	18.8	17.8	25.1

The foregoing discussion of growth periods in the acquisition of reading ability has emphasized the following facts: (a) oral reading ability improves rapidly during the lower grades and continues to improve steadily, but less rapidly, during the intermediate and upper grades; (b) A mastery of the mechanics of reading may be acquired more rapidly than ability to get the meaning of what is read; (c) Rate of silent reading increases rapidly in the lower grades and approximates a maximum rate in the upper grades; (d) Ability to comprehend the meaning of what is read improves throughout the grades, less rapidly in the lower grades and more rapidly in the upper grades; (e) Rate and quality of silent reading may be improved through training.

A survey of these facts leads to the following conclusions: Ability to get meaning should receive first consideration both in oral and in silent-reading instruction. Emphasis should change gradually from oral to silent reading in the 3d grade in order that increased attention may be given to the meaning of what is read.

Silent reading should receive major consideration during the intermediate and upper grades. Since silent-reading ability may be improved through well-selected exercises, the school should give increased opportunity for maximal development of various phases of this ability. The 4th, 5th and 6th grades represent a particularly appropriate period for emphasis on silent-reading instruction, inasmuch as the habits in regard to rate which are developed at this period seem to change but little during later periods.

RELATION OF SILENT-READING INSTRUCTION TO CHOICE OF SUBJECT
MATTER AND TO METHODS OF TEACHING

Choice of Subject Matter. Most of the reading texts in current use have been organized for purposes of oral-reading instruction. The selections from grade to grade increase in difficulty and the various selections within a reader give opportunity for the development of oral-reading ability along several lines. If silent reading is to be emphasized effectively, selections must be included which lend themselves readily to other purposes. For illustration, if rate of silent reading is to be developed, relatively easy selections must be chosen in order that the eyes may take in large units at a fixation and in order that they may move forward rapidly without the necessity of pausing to analyze difficult words or to ponder over meanings. Selections adapted to the oral reading ability of 2d or 3d-grade children may be used to advantage in developing *speed* in a 4th-grade class. Furthermore, selections of considerable length must be provided in order to give the pupil considerable opportunity to develop the desired habits. In this connection numerous interesting selections should be provided. The plan now in current use of having a class devote an entire year to the study of two or three readers must be modified if the most effective results in rate of reading are secured.

In developing ability to comprehend effectively what is read, selections must be chosen which lend themselves readily to a variety of purposes. In some cases pupils should be trained to pick out the central thought of a selection or to organize the selection in terms of the main points and the supporting details. In other cases pupils should be trained to study a selection in order that they might re-

produce it effectively, answer questions about it, compare the relative importance of the various parts, etc. In still other cases it may be necessary to train pupils to study selections in great detail in order to get at the more subtle meanings, to develop power of analysis, or to develop independence and skill in the use of dictionaries, helpful references, etc. Whatever the purpose may be, reading material should be chosen which will lend itself to effective instruction along lines where emphasis is needed.

Methods of Instruction. The improvement of speed and quality of silent reading depends as much on the use of effective methods as on the wise choice of subject matter. If rate is to be increased, a pupil may be urged to read an easy selection as rapidly as he can read it effectively, or a given period of time may be assigned in which the reading should be completed. Ten pages of *Black Beauty* may be read quickly in order to find out how many things *Black Beauty* had to become accustomed to, in order to be a well-broken horse. Many stories may be read quickly for the story or to find the answer to a given question. Whatever the purpose may be, the teacher should always ask questions or use some device which will keep attention centered on the thought.

Reading exercises which are carried on to improve the quality of the reading should be carefully planned. If the pupils are to select the most important points, or to organize the points in topical outline, or to discuss the relative value of the points made by the author, they should do this under the guidance of specific assignments. During the course of the recitation the teacher must be able to ask that question or give that direction which will prove most helpful to the student who is in difficulty. Such recitations cannot be conducted without careful thought and detailed preparation. At frequent intervals tests of speed and quality of silent reading should be made in order to determine the most urgent instructional needs of the pupils. The results of these tests should direct the teacher in the choice of future assignments.

CHAPTER III

LIBRARY AND SUPPLEMENTARY READING BOOKS RECOMMENDED FOR USE IN ELEMENTARY SCHOOLS

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This investigation was made with a view toward determining what is the prevailing practice regarding the use of library and supplementary reading books in the different grades of the elementary schools in fifty American cities, representing the different sections of the country and school systems of various sizes.

While this tabulation of books cannot be considered as an absolute standard of practice for all schools, it is sufficiently extensive to represent the prevailing practice with a fair degree of approximation. In collecting the data for these lists, the courses of study were divided into two groups of twenty-five each and the books recommended in each group tabulated separately. The two lists were then combined. It was found that the two lists did not differ in any considerable degree, which leads to the opinion that, even if one hundred courses had been selected and all books eliminated that were not recommended ten times or more, the results would not have been materially different from those presented. While many excellent books were eliminated because they were not recommended five times or more and many less desirable books are included in this list, we feel safe in saying that this list is quite representative of the current practice in the use of supplementary literature in the grades of the elementary schools.

The library books and supplementary readers are listed separately by grades. Within the grade they are arranged serially on the basis of frequency of occurrence. In a few instances where there are several editions of the same book recommended for differ-

ent grades, and the author is well known, the editor of the edition is given in place of the author, as in the case of *Robinson Crusoe*. Under "No. Times Recommended" is given the total number of times each book is recommended. If the same book is recommended for more than one grade in the same school, the recommendation for each grade counts as one. Under "Range of Grades" is given the range of the recommendations, from the lowest grade in which the book first appears, to the highest grade for which it is recommended.

Each book is assigned to the grade in which it is recommended the greatest number of times. If the same book is recommended an equal number of times in two or more grades, it is classified under each of these grades, as in the case of Warner's *Hunting of the Deer* in the seventh and eighth grades.

The original list, which included all of the books recommended in the fifty courses of study, contained 1342 titles. It was deemed advisable, however, to eliminate all books that were recommended fewer than five times. This brought the total number down to 912, including duplications, distributed as follows:

Library Books

First Grade.....	8
Second Grade.....	62
Third Grade.....	73
Fourth Grade.....	102
Fifth Grade.....	149
Sixth Grade.....	155
Seventh Grade.....	163
Eighth Grade.....	105
	<hr/>
Total.....	817

Supplementary Readers

First Grade.....	44
Second Grade.....	21
Third Grade.....	19
Fourth Grade.....	6
Fifth Grade.....	3
Sixth Grade.....	2
	<hr/>
Total.....	95

Total number books recommended.....	<hr/> 912
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This list of books was compiled from the courses of study of the following fifty American cities:

Atlanta, Ga.	Manchester, N. H.
Atlantic City, N. J.	McKeesport, Pa.
Augusta, Ga.	Memphis, Tenn.
Berkeley, Cal.	Minneapolis, Minn.
Boston, Mass.	Muskogee, Okla.
Canton, Ohio.	Newark, N. J.
Chelsea, Mass.	New Orleans, La.
Cheyenne, Wyo.	Ogden, Utah.
Chicago, Ill.	Omaha, Neb.
Cincinnati, O.	Paterson, N. J.
Columbia, S. C.	Portland, Ore.
Columbus, O.	Racine, Wis.
Dayton, Ohio.	Reading, Pa.
Decatur, Ill.	Rockford, Ill.
Des Moines, Iowa.	Saginaw, Mich.
Evansville, Ind.	Salt Lake City, Utah.
Grafton, N. D.	San Francisco, Cal.
Harrisburg, Pa.	Spokane, Wash.
Holyoke, Mass.	Springfield, Mass.
Houston, Tex.	Springfield, O.
Indianapolis, Ind.	Superior, Wis.
Lansing, Mich.	Toledo, O.
Lincoln, Neb.	University of Chicago, El. School.
Los Angeles, Cal.	Washington, D. C.
Louisville, Ky.	Watertown, N. Y.

LIBRARY BOOKS RECOMMENDED BY FIVE OR MORE OF
FIFTY AMERICAN CITIES

TITLES	AUTHORS	NO. TIMES RECOMMENDED, ALL GRADES.	RANGE
			OF GRADES FOR WHICH RECOMMENDED.
<i>Grade I.</i>			
Little Rhymes for Little Readers.....	Seegmiller	14	1-3
Classic Stories for Little Ones.....	McMurry	10	1-3
Book of Nursery Rhymes.....	Welsh	10	1-2
Little Stories for Little People.....	McCullough	8	1-3
Short Stories for Little People.....	Bryce	6	1-2
Brownies at Home.....	Cox	6	1-2
Brownies Abroad	Cox	6	1-2
Animals, Wild and Tame.....	Favis	5	1-3

(See also list of *Readers* that follows.)

TITLES	AUTHORS	NO. TIMES RECOMMENDED, ALL GRADES.	RANGE OF GRADES FOR WHICH RECOMMENDED.
<i>Grade II.</i>			
Aesop's Fables	Pratt	28	1-4
Sunbonnet Baby Book.....	Grover	25	1-3
Fairy Tales from Grimm.....	Wiltse	24	1-4
Boy Blue and His Friends.....	Blaisdell	20	1-3
Bow-Wow and Mew-Mew.....	Chadwick	18	1-3
Animal Life	Bass	17	2-5
Fairy Tales and Fables.....	Baldwin	17	2-6
Overall Boys	Grover	17	1-3
Cat Tails and Other Tales.....	Howliston	17	1-3
Brownie Book	Cox	15	1-2
Around the World, Book I.....	Tolman	15	2-3
Pied Piper of Hamlin.....	Browning	13	2-3
Little Red Riding Hood.....	Lang	12	1-3
Dame Wiggins of Lee.....	Marshall	12	1-3
Little Red Hen.....	Chadwick	11	1-2
So Fat and Mew-Mew.....	Craik	11	2-3
Heart of Oak Book, I, Rhymes and Jingles	Norton	11	1-2
Hawk-Eye, an Indian Story.....	Smith	11	1-2
Verse and Prose for Beginners.....	Seudder	10	1-3
Legends of the Red Man's Forest.....	Tanner	10	1-3
Classic Fables	Turpin	10	2-4
Book of Nursery Rhymes.....	Welsh	10	1-2
Red Riding Hood and Other Stories...	Chisholm	9	1-2
Child Stories and Rhymes.....	Poulsson	9	1-3
Robinson Crusoe	Cowles	8	1-2
In Field and Pasture.....	Dutton	8	2-4
In Mother Goose Land.....	Goldman	8	1-3
Hiawatha and Nature.....	Krackowizer	8	1-3
Stories for Children.....	Lane	8	1-2
Hiawatha, the Story of.....	Norris	8	2-4
Among Farmyard People.....	Pierson	8	2-5
Little Eskimo	Smith	8	1-2
Reynard, the Fox.....	Smyth	8	1-3
Tales of Peter Rabbit.....	Smyth	8	1-3
Stories of Mother Goose Village.....	Bingham	7	2-3
Buds, Stems and Roots.....	Chase	7	2-3
Little Indian Folks.....	Deming	7	1-3
Work that is Play.....	Gardner	7	1-2

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Books of Plays for Little Actors.....	Johnston	7	1-3
Ants, Bees and Wasps.....	Lubbock	7	1-3
Tales of Mother Goose.....	Perrault	7	2-3
Fables and Rhymes.....	Adams	6	2-3
Fables from Afar.....	Bryce	6	2-3
Nature Stories for Young Readers, Animals	Bass	6	2-3
Nature Stories for Young Readers, Plants	Bass	6	2-3
Brownies Abroad	Cox	6	1-2
Brownie at Home.....	Cox	6	1-2
Cinderella and Other Stories.....	Chisholm	6	2-3
Little Red People.....	Deming	6	2-3
Wee Winkle and Wide Awake.....	Jackson	6	2
Little Flower Folks.....	Pratt	6	2-4
Rhymes and Stories	Lansing	6	2-3
Little Bear	Smith	6	1-3
Earth and Sky.....	Stickney	6	2-3
Old Time Stories Retold.....	Smyth	6	2-4
Victor in Buzzland.....	Bell	5	2
Brownies Around the World.....	Cox	5	1-2
Animals, Wild and Tame.....	Davis	5	1-3
Marigold Garden	Greenaway	5	1-2
Fables from Aesop.....	Godolphin	5	1-2
Folk Lore and Proverbs.....	Wiltse	5	2-3
Through the Farmyard Gate.....	Poulsion	5	1-2

(See also list of *Readers* that follows.)

Grade III.

Seven Little Sisters.....	Andrews	29	2-6
Adventures of a Brownie.....	Craik	23	2-5
Animal Life	Bass	17	1-5
Little Folks of Many Lands.....	Chance	15	2-5
Merry Animal Tales.....	Bingham	14	2-4
Book of Folk Stories.....	Scudder	14	2-4
That's Why Stories.....	Bryce	13	2-3
Children of the Wigwam.....	Chase	13	3-5
Ab, the Cave Man.....	Dopp	13	2-5
Child's Garden of Verses.....	Stevenson	13	1-3

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Mother Goose Village.....	Bingham	12	2-3
Nature Myths and Stories.....	Cooke	12	2-4
Legends of the Red Children.....	Pratt	12	2-4
Myths of the Red Children.....	Wilson	12	2-5
Another Fairy Reader.....	Baldwin	11	2-4
Child Life in Tale and Fable.....	Blaisdell	11	2-3
Little Folks of Other Lands.....	Humphrey & Chapin	11	2-5
Book of Nature Myths.....	Holbrook	11	3-5
Heart of Oak Book, 2, Fables and Nursery Rhymes	Norton	11	2-4
In Fableland	Serl	11	1-4
Eskimo Stories	Smith	11	2-3
Book of Golden Deeds.....	Baldwin	10	3-5
Twilight Stories	Foulke	10	2-4
Robinson Crusoe	Godolphin	10	2-3
Around the World, Book 2.....	Tolman	10	3-4
In Mythland	Becksmith	9	2-3
Hopi, the Cliff Dweller.....	Hewett	9	2-4
Beauty and the Beast.....	Long	9	3-5
Home Geography for Primary Grades..	Long	9	2-4
Little People of the Snow.....	Muller	9	3-4
From September to June with Nature..	Warren	9	3-4
Another Brownie Book.....	Cox	8	1-3
In Field and Pasture.....	Dutton	8	2-4
Jack the Giant Killer.....	Lang	8	2-4
Cave Boy of the Age of Stone.....	McIntyre	8	2-5
Among Farmyard People.....	Pierson	8	2-5
Buzz-Buzz	Pratt	8	2-4
Tale of Peter Rabbit.....	Smith	8	1-3
Ballads for Little Folks.....	Taylor	8	3-4
Books of Plays for Little Actors.....	Johnston	7	1-3
Leaves from Nature's Story Book....	Kelly	7	2-3
Ants, Bees and Wasps.....	Lubbock	7	1-3
Fishing and Hunting.....	Mott	7	1-3
Japanese Twins	Perkins	7	3-4
Story Hour, The.....	Wiggin	7	1-4
Fables and Rhymes.....	Adams	6	2-3
Folk Stories and Verse.....	Adams	6	3-4
Old Mother West Wind.....	Burgess	6	3-4

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Little Red People.....	Deming	6	2-3
Tell It Again Stories.....	Dillingham & Emerson	6	3-4
Legends of Springtime.....	Hoyt	6	3-4
Tales and Customs of the Ancient Hebrews	Herbst	6	3-4
Blue Fairy Book.....	Lang	6	2-4
Rhymes and Stories.....	Lansing	6	2-3
Wide World, The.....	Lane	6	3-4
Fairy Book	Mulock	6	3-4
Little Flower Folks.....	Pratt	6	2-4
Mother Goose Tales	Perrault	6	2-3
Five Minute Stories.....	Richards	6	3-4
Earth and Sky.....	Stichney	6	2-3
Classics, Old and New.....	Alderman	5	3-5
Eyes and no Eyes.....	Aiken	5	3-6
Second Fairy Reader.....	Baldwin	5	2-3
Firelight Stories	Bailey	5	2-3
Stories for Little Folks.....	Bryce	5	3-4
Stories of Animal Land.....	Chase	5	3-4
Fables from Aesop.....	Jacobs	5	2-3
Book of Verse for Children.....	Lucas	5	3-4
Petter and Polly in Winter.....	Lucia	5	2-3
Among the Pond People.....	Pierson	5	3-5
Child Literature	Simms	5	2-4
Farm Book	Smith	5	2-3
Lodrix, the Little Lake Dweller.....	Wiley	5	2-4

(See also list of *Readers*.)

Grade IV.

Fifty Famous Stories Retold.....	Baldwin	41	3-6
Seven Little Sisters.....	Andrews	29	2-6
Black Beauty	Sewell	29	3-7
Alice's Adventures in Wonderland.....	Carroll	28	2-5
Great Americans for Little Americans.	Eggleston	28	3-5
Anderson's Fairy Tales.....	Seudder	26	2-5
Arabian Nights	Anonymous	21	3-7
American's Story for Little Children..	Pratt	21	1-4
Big People and Little People of Other Lands	Shaw	21	2-6

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
All the Year 'Round.....	Bass	16	2-5
Aunt Joe's Scrap Bag.....	Alcott	14	4-6
Aunt Martha's Cupboard.....	Kirby	14	4-6
Water Babies	Kingsley	14	3-6
Children of the Cold.....	Schwatka	14	4-6
In the Animal World.....	Serl	14	3-5
Animal Fables	Stafford	14	2-5
Children of the Wigwam.....	Chase	13	3-5
World and Its People, The.....	Carroll	13	3-5
German Household Tales.....	Grimm	13	2-5
Anderson's Stories	Mifflin	13	4-5
Folk Stories and Fables.....	Tappan	13	4-7
Little Lord Fontleroy.....	Burnett	12	4-5
Alice Through a Looking Glass.....	Carroll	12	3-5
Legends of the Red Children.....	Pratt	12	2-4
Stories of Colonial Children.....	Pratt	12	3-6
American Life and Adventures.....	Starr	12	3-6
Our Birds and Their Nestlings.....	Walker	12	4-6
Seaside and Wayside.....	Wright	12	2-5
Thirty More Famous Stories.....	Baldwin	11	4-5
Fables from Aesop Told to Children...	Dalkeith	11	3-4
Book of Nature Myths.....	Holbrook	11	3-5
Colonial Children	Pratt	11	3-4
Fairy Tales from Many Lands.....	Pyle	11	3-4
Snow Baby	Peary	11	3-4
Five Little Strangers.....	Schwartz	11	2-5
Animals at Home.....	Bartlett	10	2-5
Boyhood of Famous Americans.....	Chase	10	3-5
Asgard Stories	Foster	10	3-6
Pinocchio	Gollodi	10	2-5
Fairy Tales from Grimm.....	Lucas	10	4-5
First and Second Book of Birds.....	Miller	10	4-7
Fifty Stories and Fables.....	Baldwin	9	3-5
Stories of Pioneer Life.....	Bass	9	4-5
Little Pilgrim's Progress.....	Burnett	9	4-6
Indian Children	Husted	9	3-5
Short Stories of Our Shy Neighbors...	Kelly	9	3-4
Household Stories	Klingensmith	9	2-5
Beauty and the Beast.....	Long	9	3-5
Little People of Japan.....	Muller	9	3-4

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Calvert of Maryland.....	Otis	9	4-7
East o' the Sun and West o' the Moon.	Thorne	9	3-5
Fifty Famous People.....	Baldwin	8	3-5
Grant, U. S., True Story of.....	Brooks	8	4-8
Uncle Remus and the Little Boy.....	Harris	8	3-4
Daniel Boone	Hill	8	4-6
Animal Story Book	Long	8	3-6
Richards of Jamestown	Otis	8	3-5
Children of the Arctic.....	Peary	8	3-4
Among the Camps.....	Page	8	4-6
Four American Patriots.....	Burton	7	4-7
The Tree Dwellers.....	Dopp	7	3-4
What Tommy Did.....	Miller	7	3-4
Prose and Verse for Children.....	Pyle	7	3-5
Little Folks of North America.....	Wade	7	4-7
Posy Ring	Wiggin	7	3-5
Calendar Stories	Boyle	6	3-5
Geography for Young Folks.....	Baker	6	4-5
Legends of Springtime.....	Hoyt	6	3-4
Tales of the Far North.....	Klugh	6	3-4
'Twas the Night Before Christmas....	Moore	6	3-4
Kristy's Queer Christmas.....	Miller	6	4-6
Bed-Time Stories	Moulton	6	4-5
Butterflies and Bees.....	Morley	6	4-5
History of the United States.....	Pierson	6	3-5
Five Minute Stories.....	Richards	6	3-4
Indian Folk Tales	Roulet	6	4-6
Book of Legends.....	Scudder	6	2-5
Old Mother West Wind.....		6	3-4
Flower Princess	Brown	5	3-4
Friends and Cousins.....	Brown	5	3-4
Robinson Crusoe Written Anew.....	Baldwin	5	4-5
Book of Birds.....	Chapman	5	3-4
Cable Story Book.....	Cable	5	4-6
Waste Not Want Not.....	Edgeworth	5	4-5
Folk Tales from Many Lands.....	Gask	5	4-5
Land of Make-Believe.....	Gardner	5	3-4
Mr. Rabbit at Home.....	Harris	5	4-5
Stories of Indian Children.....	Husted	5	3-4
Ballads and Tales.....	Haaren	5	3-4

TITLES	AUTHORS	RANGE OF GRADES	
		NO. TIMES RECOMMENDED, ALL GRADES.	FOR WHICH RECOMMENDED.
Stories of American Discoverers.....	Lucia	5	4-5
Flowers and Their Friends.....	Morley	5	4-5
Little Folks in Feathers and Furs.....	Miller	5	4-5
Little Wanderers	Morley	5	3-5
Among the Pond People.....	Pierson	5	3-5
History of England.....	Pierson	5	3-5
Lives of the Presidents.....	Pierson	5	4-5
Plants and Their Children.....	Parsons	5	4-5
Child Literatures	Simms	5	2-4
History of Japan.....	Smith	5	3-5
Seven Little People.....	Scudder	5	4-5
Golden Goose Swedish Fairy Tales.....	Tappan	5	3-4
Little Lucy's Wonderful Globe.....	Yonge	5	4-5

Grade V.

King of the Golden River.....	Ruskin	34	3-6
Old Greek Stories.....	Baldwin	23	3-7
Ten Boys, etc.....	Andrews	22	3-6
Little Lame Prince.....	Mulock	22	4-6
King Arthur and His Knights.....	Radford	22	4-8
American History Stories.....	Pratt	20	3-7
Lobo, Rag, and Vixen.....	Seton	20	4-6
First Book in American History.....	Eggleston	17	4-7
Jackanapes	Ewing	17	5-7
Geography, Home	Fairbanks	17	3-6
Alices' Visit to the Hawaiian Is.....	Krout	17	4-7
Birds' Christmas Carol.....	Wiggin	17	3-6
Swiss Family Robinson.....	Wyss	16	3-8
Each and All.....	Andrews	15	3-6
Early Cave Man.....	Dopp	15	2-5
Robinson Crusoe Told to Children.....	Lang	15	3-5
Fanciful Tales	Stockton	15	3-6
Founders of Our Country.....	Coe	14	4-7
Later Cave Men.....	Dopp	14	2-6
Wigwam Stories	Judd	14	4-7
Aunt Martha's Cupboard.....	Kirby	14	4-6
Children of the Cold	Schwatka	14	4-6
Discoverers and Explorers.....	Shaw	14	3-4
Four Great Americans.....	Baldwin	13	4-7
Squirrels and Other Fur Bearers.....	Burroughs	13	4-7

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Stories of Industry.....	Chase	13	4-7
American Explorers	Gordy	13	5-8
Boy on a Farm, A.....	Howells	13	2-6
Story of Columbus.....	Pratt	13	5-6
Folk Stories and Fables.....	Tappan	13	4-7
Old Stories of the East.....	Baldwin	12	3-6
Birds Every Child Should Know.....	Blanchen	12	5-7
Alice Through a Looking Glass.....	Carroll	12	3-5
Heart of Oak, Book 3, Fairy Tales and Poems	Norton	12	3-6
Legends of Norseland.....	Pratt	12	4-6
Stories of Colonial Children.....	Pratt	12	3-6
Our Birds and Their Nestlings.....	Walker	12	4-6
Rab and His Friends.....	Brown	11	4-7
About Animals	Carter	11	4-7
Nurnberg Stove, The De La Rame.....	De La Rame	11	4-7
Little Nell	Dickens	11	4-7
American Pioneers	Mowry	11	4-8
America's Discovery	Rose	11	4-7
American Indians	Starr	11	4-7
Legends of King Arthur.....	Green	10	5 6
Folk Tales Every Child Should Know..	Mabie	10	4-6
Fairy Rings	Wiggin	10	4-5
Little Pilgrims' Progress.....	Burnett	9	4-6
Sara Crew	Burnett	9	4-6
Golden Fleece	Baldwin	9	4-6
Gulliver's Travels Retold.....	Baldwin	9	4-7
In the Days of the Giants.....	Brown	9	5-6
How the World is Fed.....	Carpenter	9	4-7
Hunting and Fishing.....	Dutton	9	3-5
Cods and Heroes.....	Grancillon	9	4-6
Just So Stories.....	Kipling	9	4-6
Industries of To-day.....	Lane	9	3-7
Little Brother of the Bear.....	Long	9	5-7
Hiawatha	Longfellow	9	4-7
Indian Stories	Newell	9	3-6
Hannah of Kentucky.....	Otis	9	4-6
Calvert of Maryland.....	Otis	9	4-6
Land of the Blue Flower.....	Burnett	8	4-6
Little Betty Blow.....	Barnes	8	5-6

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Stories of Country Life.....	Bradish	8	3-6
Alcott Story Book.....	Coe	8	3-5
Bird Book	Eckstorm	8	5-7
Story of the Great Republic.....	Guerber	8	5-7
Viking Tales	Hall	8	3-6
Daniel Boone	Hill	8	4-6
In the Misty Realms of Fable.....	Klechner	8	4-6
At the Back of the North Wind.....	McDonald	8	4-6
Fairy Tales Every Child Should Know.	Mabie	8	4-5
Flower People	Mann	8	4-6
Little Mitchell	Morley	8	5-6
Around the World, Book 3.....	Tolman	8	4-5
Lisbeth Longfrock	Aanrud	7	3-5
Stories from English History.....	Blaisdell	7	4-7
Four American Patriots.....	Burton	7	4-7
Heroes of Everyday Life.....	Coe	7	5-6
How the World is Clothed.....	Carpenter	7	4-6
Friends and Helpers.....	Eddy	7	3-6
Picturesque Geography Readers.....	King	7	4-5
Children's Hour and Other Poems....	Longfellow	7	4-6
Donald in Scotland.....	McDonald	7	5-7
Two Little Confederates.....	Page	7	4-6
Child of Urbino.....	Ramee	7	4-6
Five Little Peppers.....	Sidney	7	5-6
Four American Indians.....	Whitney	7	5-7
Japanese Fairy Tales.....	Williston	7	4-5
Story of Patsy.....	Wiggin	7	4-7
American History Story Book.....	Blaisdell	6	4-5
Geography for Young Folks.....	Baker	6	4-5
Poems Every Child Should Know.....	Burt	6	4-5
How the World is Housed.....	Carpenter	6	4-7
Knights of King Arthur's Court.....	Cox	6	5-6
Birds Through the Year.....	Gilmore	6	4-6
Adrift in an Icepan.....	Grenfel	6	4-5
Children in Literature.....	Husted	6	4-6
Four Old Greeks.....	Hall	6	5-6
Bed-Time Stories	Moulton	6	4-5
Butterflies and Bees.....	Morley	6	4-5
Kristy's Queer Christmas.....	Miller	6	4-6
Japanese Folk Stories	Nixon	6	5-6

TITLES	AUTHORS	RANGE OF GRADES FOR WHICH	
		NO. TIMES RECOMMENDED, ALL GRADES.	RECOMMENDED.
Great West, The.....	Pratt	6	4-6
Stories of Northern Europe.....	Pratt	6	4-5
Heroes of Myth.....	Price	6	5-6
Page Story Book.....	Page	6	4-6
Child World	Riley	6	4-6
Indian Folk Tales.....	Roulet	6	4-6
Boys of Other Countries.....	Taylor	6	4-6
Around the World, Book 4.....	Tolman	6	4-5
Pilgrims and Puritans.....	Tiffany	6	4-6
Being a Boy.....	Warner	6	5-7
Child Life in Japan.....	Ayrton	5	4-5
Classics Old and New.....	Alderman	5	3-5
Fairy Tales from the Far North.....	Asbjornson	5	5-6
Indian Fairy Tales.....	Allen	5	5-6
Joan of Arc.....	Boutet	5	4-5
Lolami, the Little Cliff Dweller.....	Bayliss	5	4-5
True Story of Washington.....	Brooks	5	4-6
Drake and His Yeomen.....	Barnes	5	5-7
Cable Story Book.....	Cable	5	4-6
Paul Dombey	Dickens	5	5-7
Manners and Customs of Old New England	Earle	5	4-5
Zig-Zag Journeys	Estes	5	5-7
Explorers and Founders of America...	Foote	5	5-6
Many-Sided Franklin	Ford	5	5-7
Discovery and Exploration of America..	Gilman	5	4-6
Little Journeys to Mexico and Central America	George	5	5-7
Little Journeys to China and Japan..	George	5	4-6
Four Great Pathfinders.....	Howard	5	5-6
How New England Was Made.....	Humphrey	5	4-5
Little Flower People.....	Hale	5	5-6
Little Journeys to Some Strange Places and People in the S.W.....	James	5	5-6
Heroes of Asgard.....	Keary	5	5-7
Under Southern Skies.....	Lane	5	3-5
Gerda in Sweden.....	McDonald	5	5-6
Bee People	Morley	5	4-5
Little Wanderers	Morley	5	3-5
Mighty Animals	Mix	5	5-6

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
People Here and There,—Australia...	Pratt	5	5-6
Snowland Folk	Peary	5	4-5
Stories of Invention.....	Russell	5	5-7
Early American History.....	Sabin	5	5-6
Two Little Savages.....	Seton	5	5-7
Wilderness Babies	Schwartz	5	4-7
Choice Literature, Book 5.....	Williams	5	5
Ten Little Indians.....	Wade	5	4-6
<i>Grade VI</i>			
Jungle Book	Kipling	30	4-8
Merry Adventures of Robin Hood....	Pyle	24	4-8
Norse Stories	Mabie	23	3-8
Wonder Book	Hawthorne	20	4-7
Lobo, Rag, and Vizen.....	Seton	20	4-6
Uncle Remus and His Friends.....	Harris	19	3-7
Heidi	Spiri	19	3-8
Tanglewood Tales	Hawthorne	18	4-7
Ways of the Woodfolk.....	Long	18	4-6
American Heroes of History.....	McFee	18	4-8
Dog of Flanders	Ramee	18	5-7
Brooks and Brook Basins.....	Frye	16	4-7
Wilderness Ways	Long	16	4-6
Homeric Stories for Young Readers..	Hall	15	4-8
Children's Hours	Tappan	15	5-7
Geographical Reader	Guyot	14	4-7
Story of the Thirteen Colonies.....	Guerber	14	5-7
Beginners' American History.....	Montgomery	14	5-7
Betty in Canada.....	McDonald	14	4-7
Krag and Johnnie Bear.....	Seton	14	5-7
Stories of Industry	Chase	13	4-7
Famous Men of Rome.....	Haaren	13	5-7
Great American Industries.....	Rochelau	13	4-8
Mary of Plymouth.....	Otis	13	3-6
Birds Every Child Should Know.....	Blanchen	12	5-7
Adventures of a Roman Boy.....	Church	12	5-7
In the Reign of the Coyote.....	Chandler	12	5-7
Benjamin of Ohio.....	Kaler	12	5-8
First Steps in the History of Our Country	Mowry	12	4-7

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Story of a Bad Boy.....	Aldrich	11	4-7
Famous American Statesmen.....	Bolton	11	5-6
How We are Clothed, Fed, Sheltered, and How we Travel.....	Chamberlain	11	5-7
Famous Men of Greece.....	Haaren	11	5-7
Famous Men of Modern Times.....	Haaren	11	5-8
Little Colonel	Johnston	11	5-6
Beautiful Joe	Saunders	11	4-7
Stories Mother Nature Told Her Children	Andrews	10	4-6
Lafayette, Friend of American Liberty	Burton	10	4-7
Pictures from Roman Life and Story..	Church	10	5-8
Stories of Ulysses.....	Church	10	4-7
Legends of King Arthur.....	Greene	10	5-6
Famous Men of the Middle Ages.....	Haaren	10	5-8
Men of Old Greece.....	Hall	10	4-6
Fritz in Germany.....	McDonald	10	5-7
Home Life in All Lands.....	Morris	10	5-7
Heroes of History.....	Sadlier	10	3-8
Story of the Greek People.....	Tappan	10	5-7
Harold's Quests	Troeger	10	4-6
Gulliver's Travels Retold.....	Baldwin	9	4-7
Little Pilgrim's Progress.....	Burnett	9	4-6
Grandfather's Stories of Am. Hist....	Dodge	9	4-6
Emergencies	Gulick	9	4-6
Story of the Chosen People.....	Guerber	9	3-6
Knocking Around the Rockies.....	Ingersoll	9	6-8
Little Brother of the Bear.....	Long	9	5-7
Flamingo Feather	Munro	9	6-7
At War with Pontiac.....	Munroe	9	6-8
Calvert of Maryland.....	Otis	9	4-6
Captain January	Richards	9	5-7
Hans the Eskimo.....	Scandlin	9	4-6
Land of the Blue Flower.....	Burnett	8	4-6
Little Betty Blow.....	Barnes	8	5-6
Indian Stories for Young Folks.....	Drake	8	6-8
Bird Book	Eckstorm	8	5-7
Story of the Great Republic.....	Guerber	8	5-7
Historic Boyhoods	Holland	8	5-7

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Insect Stories.....	Kellogg	8	5-7
Secrets of the Woods.....	Long	8	5-7
At the Back of the North Wind.....	McDonald	8	4-6
Little Mitchell	Morley	8	5-6
Martha of Holland.....	McDonald	8	5-6
Ruth of Boston.....	Otis	8	4-7
Four American Pioneers.....	Perry	8	4-6
Everyday Life in the Colonies.....	Stone	8	5-6
Moni.	Spiri	8	5-7
Jack and Jill.....	Alcott	7	5-7
Bold Robin and His Forest Rangers...	Brown	7	5-6
Friends and Helpers.....	Eddy	7	3-6
Indian Boyhood	Eastman	7	5-7
Christmas Tales and Christmas Verse.	Field	7	4-6
Colliery Jim	Finch	7	4-6
Court of King Arthur.....	Frost	7	6-8
Indians and Pioneers.....	Hazard & Dutton	7	5-7
Children's Hour and Other Poems....	Longfellow	7	4-6
Child Stories from the Masters.....	?	7	5-6
Further Adventures of Nils.....	Lagerlof	7	6-8
Washington, Life of.....	Lodge	7	5-7
Boris in Russia.....	McDonald	7	5-7
Donald in Scotland.....	McDonald	7	5-7
Hassen in Egypt.....	McDonald	7	5-7
Legends Every Child Should Know ...	Mabie	7	5-7
Peter of New Amsterdam.....	Otis	7	3-6
Myths of Old Greece.....	Pratt	7	5-6
Bimbi	Ramee	7	5-6
Choice Literature, Book 6,.....	Williams	7	6-7
Four American Indians.....	Whitney	7	5-7
Story of Patsy.....	Wiggin	7	4-7
Boys' Book of Inventions.....	Baker	6	5-7
Boyhood in Norway.....	Boyeson	6	6-8
Four American Naval Heroes.....	Beebe	6	5-7
Hero Stories from American History..	Blaisdell	6	5-7
Knights of King Arthur's Court.....	Cox	6	5-6
With Evans to the Pacific.....	Codd	6	5-7
Knights of the Round Table.....	Frost	6	6-7
Black Bruin	Hawks	6	5-6
Four Old Greeks.....	Hall	6	5-6

TITLES	AUTHORS	NO. TIMES RECOMMENDED, ALL GRADES.	RANGE OF GRADES FOR WHICH
			RECOMMENDED.
Story of Europe.....	Harding	6	6-7
Indian Fairy Tales.....	Jacobs	6	5-7
Lives and Stories Worth Remem- bering	Kupfer	6	4-7
Toward the Rising Sun.....	Lane	6	5-7
Tramp Across the Continent.....	Lummis	6	5-7
Josefa in Spain.....	McDonald	6	5-7
Kathleen in Ireland.....	McDonald	6	5-7
Kristy's Queer Christmas.....	Miller	6	4-6
Myths Every Child Should Know....	Mabie	6	5-6
Great Names and Nations, Ancient...	Niver	6	6-8
Great Names and Nations, Modern....	Niver	6	6-8
Martha of California.....	Otis	6	4-6
DeSoto, Marquette, and LaSalle.....	Pratt	6	5-7
Heroes of Myth.....	Price	6	5-6
Dorcas, the Indian Boy.....	Snedden	6	4-6
Drake and His Yeoman.....	Barnes	5	5-7
Stories of the East.....	Baldwin	5	5-6
True Story of Abraham Lincoln.....	Brooks	5	5-6
True Story of Christopher Columbus..	Brooks	5	4-6
Colonial Stories Retold.....	Church	5	5-6
Famous Legends	Crommelin	5	5-6
Makers of the Nation.....	Coe	5	5-6
Story of Cotton.....	Curtin	5	5-6
Zig-Zag Journeys	Estes	5	5-7
Little Journeys to China and Japan..	George	5	4-6
Day of King Arthur.....	Hanson	5	6-8
Mr. Rabbit at Home.....	Harris	5	5-6
Historic Girlhoods	Holland	5	5-7
Classics Myths	Judd	5	3-6
Four American Explorers.....	Kingsley	5	5-6
Heroes of Asgard.....	Keary	5	5-7
Boys' Stories	Kipling	5	6-7
Tales of the Round Table.....	Lang	5	6-7
Wonderful Adventures of Nils.....	Lagerlof	5	6
Bears of Blue River.....	Major	5	5-8
Little Brothers of the Air.....	Miller	5	6-8
Nixie Well	Marshall	5	5-6
True Bear Stories.....	Miller	5	6-7
Heart of the Oak, Book 6, Literature...	Norton	5	6-8

TITLES	AUTHORS	NO. TIMES RECOMMENDED, ALL GRADES.	RANGE
			OF GRADES FOR WHICH RECOMMENDED.
Toby Tyler	Otis	5	5-6
Men of Iron.....	Pyle	5	6-8
Uncle Robert's Visit.....	Parker-Helm	5	5-6
Hero Tales of the Far North.....	Riis	5	6-8
Around the World in the Sloop Spray.	Slocum	5	6-7
Trail of the Sandhill Stag.....	Seton	5	6-8
Robin Hood, His Book.....	Tappan	5	5-6
Golden Numbers	Wiggin	5	6-8
Natural History	Wood	5	5-6

Grade VII.

Geographical Reader, Europe.....	Carpenter	44	4-8
Geographical Reader, Europe.....	Carpenter	40	4-8
Geographical Reader, Europe.....	Carpenter	38	4-8
Tales from Shakespeare.....	Lamb	28	5-8
American Hero Stories.....	Tappan	25	4-8
Geographical Reader, Asia.....	Carpenter	22	4-8
Geographical Reader, Australia.....	Carpenter	21	4-8
Grandfather's Chair	Hawthorne	21	5-8
Hoosier School Boy.....	Eggleston	20	5-8
Lives of the Hunted.....	Seton	19	5-8
A-Hunting of the Deer.....	Warner	19	6-8
Geographical Reader, Africa.....	Carpenter	18	4-8
Rip Van Winkle.....	Irving	18	6-8
Adventures of Ulysses.....	Lamb	17	5-8
Courtship of Miles Standish.....	Longfellow	17	6-8
Geography of Commerce and Industry.	Rocheleau	17	7-8
American Poems	Scudder	17	6-8
Treasure Island	Stevenson	17	6-8
Little Men	Alcott	16	5-8
Little Women	Alcott	16	5-8
Birds and Bees.....	Burroughs	15	4-8
Discovery of the Old Northwest.....	Baldwin	15	4-8
English History Story Book.....	Blaisdell	15	5-8
Hans Brinker	Dodge	15	5-7
Legend of Sleepy Hollow.....	Irving	15	6-8
Captains Courageous	Kipling	15	7-8
Conquest of the Old Northwest.....	Baldwin	14	6-8
Story of the Romans.....	Guerber	14	5-8
Beginner's American History.....	Montgomery	14	5-7

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Krag and Johnnie Bear.....	Seton	14	5-7
Biography of a Grizzly.....	Seton	13	6-8
Greek Stories	Tappan	13	6-7
Boys of '76.....	Coffin	12	6-8
Christmas Carol	Dickens	12	6-8
Betty Leicester	Jewett	12	5-8
Benjamin of Ohio.....	Kaler	12	5-8
First Steps in the History of Our Country	Mowry	12	4-7
Cortez and Montezuma.....	Pratt	12	6-7
American Prose	Seudder	12	6-8
Wild Animals I Have Known.....	Seton	12	5-7
Jo's Boys	Alcott	11	6-8
Rab and His Friends.....	Brown	11	4-7
Girls Who Became Famous.....	Bolton	11	6-8
David Copperfield	Dickens	11	5-8
Story of the English.....	Guerber	11	6-8
Woodfolk at School.....	Long	11	6-7
About Old Story Tellers.....	Mitchell	11	6-8
European Hero Stories.....	Tappan	11	6-7
Eight Cousins	Alcott	10	7-8
In the Boyhood of Lincoln.....	Butterworth	10	6-8
Geographical Reader, Europe.....	Chamberlain	10	6-8
Pictures from Roman Life and Story...	Church	10	5-8
Young Citizen	Dole	10	6-7
Cricket on the Hearth.....	Dickens	10	6-8
Hoosier Schoolmaster	Eggleston	10	6-8
American Classics	Houghton-Mif.	10	6-8
Town and City.....	Jewett	10	6-8
A. B. C. of Electricity.....	Meadowcroft	10	7-8
Under the Lilacs.....	Alcott	9	6-7
Bird Neighbors	Blanchen	9	6-8
Story of Cotton.....	Brooks	9	5-8
Geographical Reader, North America..	Chamberlain	9	6-8
Home Life in Colonial Days.....	Earle	9	6-8
Achilles and Hector.....	Gale	9	7-8
Tom Brown's School Days.....	Hughes	9	7-8
Knocking Around the Rockics.....	Ingersoll	9	6-8
Hiawatha	Longfellow	9	4-7
Alice of Old Vincennes.....	Thompson	9	7-8

TITLES	AUTHORS	NO. TIMES	RANGE
		RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Our Country's Story.....	Tappan	9	6-7
Spanish in the Southwest.....	Winterburn	9	5-8
Bird Stories	Burroughs	8	6-8
Geographical Reader, Asia.....	Chamberlain	8	6-8
Geographical Reader, South America..	Chamberlain	8	6-8
Iliad, Homer	Church	8	6-7
Child's History of England.....	Dickens	8	7-8
Indian Stories for Young Folks.....	Drake	8	6-8
Grandmother's Stories	Holmes	8	3-8
Greek Gods and Heroes.....	Harding	8	6-8
Tales of a Grandfather.....	Scott	8	7-8
American Revolution, The.....	Trevelyan	8	6-8
Myths from Many Lands.....	Tappan	8	6-7
Timothy's Quest	Wiggin	8	6-8
Poor Boys Who Became Famous.....	Bolton	7	6-8
Famous American Statesmen.....	Campbell	7	6-8.
Gulliver's Travels for Young Readers..	Chapman	7	6-8
Stories from English History.....	Church	7	6-8
Paul Dombey	Dickens	7	5-7
Court of King Arthur.....	Frost	7	6-8
Stories of American Explorers.....	Gordy	7	6-7
My Hunt After the Captain.....	Holmes	7	7-8
Round the Year in Myth and Song....	Holbrook	7	5-7
Betty Leicester's Christmas.....	Jewett	7	5-7
Geographical Readers	King	7	6-8
Second Jungle Book.....	Kipling	7	6-7
Further Adventures of Nils.....	Lagerlof	7	6-8
Washington, Life of.....	Lodge	7	5-7
Boy's Life of Edison.....	Meadowcroft	7	6-7
Warp and Woof.....	Very	7	7-8
Story of Patsey.....	Wiggin	7	4-7
Wampum Belt	Butterworth	6	5-7
Four American Poets.....	Cody	6	7-8
Heroes of the Middle West.....	Catherwood	6	5-7
Winning His Way.....	Coffin	6	7
Boy's of '61.....	Coffin	6	7-8
Old Times in the Colonies.....	Coffin	6	6-7
Land of the Long Night.....	DuChaillu	6	7-8
Girls' Book of Famous Queens.....	Farmer	6	7-8
Makers and Defenders of America....	Foote	6	6-7

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Knights of the Round Table.....	Frost	6	6-7
City of the Seven Hills.....	Harding	6	6-8
Story of Europe.....	Harding	6	6-7
Napoleon, the Little Corsican.....	Hathaway	6	5-7
Lives and Stories Worth Remembering.	Kupfer	6	4-7
Book of King Arthur.....	Macleod	6	7-8
Fur Seal's Tooth.....	Munroe	6	6-7
Pioneers of the Mississippi Valley....	McMurry	6	4-7
Great Names and Nations, Ancient....	Niver	6	6-8
Great Names and Nations, Modern....	Niver	6	6-8
Greek Hero Stories.....	Niebuhr	6	6-8
Captains of Industry.....	Parton	6	7-8
Fairyland of Flowers.....	Pratt	6	6-7
Mrs. Wiggs of the Cabbage Patch.....	Rice	6	7-8
Rhymes of Childhood.....	Riley	6	6-7
Paul Jones	Sewell	6	6-8
England's Story	Tappan	6	7-8
Lives of the Presidents.....	Townsend	6	7-8
Story of China.....	Van Bergen	6	5-8
Van Dyke Book.....	Van Dyke	6	6-8
How It is Done.....	Williams	6	7-8
How It is Made.....	Williams	6	7-8
How It Works.....	Williams	6	7-8
Louisiana Purchase, The.....	Winship and Wallace	6	6-7
Betty Alden	Austin	5	7-8
Fairyland of Science.....	Buckley	5	7-8
Modern Vikings	Beyesen	5	5-7
Story of Lumber.....	Bassett	5	7-8
Young Folks' History of America.....	Butterworth	5	7
Beacon Lights of Patriotism.....	Carrington	5	7-8
Famous Presidents	Campbell	5	6-7
Four Famous American Writers.....	Cody	5	6-8
Pictures from Greek Life and Story...	Church	5	7-8
The Many Sided Franklin.....	Ford	5	5-7
Boyville	Gunkle	5	7-8
Days of King Arthur.....	Hanson	5	6-8
Historic Girlhoods	Holland	5	5-7
Nights with Uncle Remus.....	Harris	5	5-7
Under Drake's Flag.....	Henty	6	7-8

TITLES	AUTHORS	NO. TIMES	RANGE
		RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Merrie England	Lippincott	5	6-8
School of the Woods.....	Long	5	7-8
Philippines, The	MacClintock	5	6-7
Little Brothers of the Air.....	Miller	5	6-8
Heart of Oak, Book 6, Literature.....	Norton	5	6-8
Boys of '98.....	Otis	5	7-8
Stephen of Philadelphia.....	Otis	5	4-7
People Here and There, England.....	Pratt	5	7-8
Hero Tales of the Far North.....	Riis	5	6-8
Trail of the Sandhill Stag.....	Seton	5	6-8
Two Little Savages.....	Seton	5	5-7
How to Become a Successful Electrician.....	Sloane	5	7-8
Modern Stories	Tappan	5	7-8
Story of Japan.....	Van Bergen	5	7-8
Golden Number	Wiggin	5	6-8

Grade VIII

Man without a Country.....	Hale	28	6-8
Sketch Book	Irving	23	7-8
A-Hunting of the Deer.....	Warner	19	6-8
Little Men	Alcott	16	5-8
Little Women	Alcott	16	5-8
House of Seven Gables.....	Hawthorne	16	7-8
Uncle Tom's Cabin.....	Stowe	16	6-8
Ivanhoe	Scott	15	6-8
Last of the Mohicans.....	Cooper	14	7-8
Franklin's Autobiography	Franklin	14	6-8
Story of the Greeks.....	Guerber	14	6-8
Story of the Romans.....	Guerber	14	5-8
Julius Caesar	Shakespeare	14	4-8
Enoch Arden	Tennyson	14	7-8
Afoot and Afloat.....	Burroughs	13	7-8
Christmas Stories	Dickens	13	7-8
Deserted Village	Goldsmith	13	7-8
Merchant of Venice.....	Shakespeare	13	8
Building the Nation	Coffin	12	7-8
David Copperfield	Dickens	12	7-8
Boys' Town, A.....	Howells	12	6-8
Vision of Sir Launfal.....	Lowell	12	7-8

TITLES	AUTHORS	RANGE OF GRADES FOR WHICH	
		NO. TIMES RECOMMENDED, ALL GRADES.	RECOMMENDED.
American Inventors and Inventions....	Mowry	12	4-8
American Prose	Scudder	12	6-8
Age of Fable.....	Bulfinch	11	7-8
Pilgrims Progress	Bunyan	11	6-8
Deerslayer	Cooper	11	5-8
Two Years Before the Mast.....	Dana	11	6-8
Hero Tales from American History....	Lodge and Roosevelt	11	5-8
In the Day of Alfred the Great.....	Tappan	11	7-8
Eight Cousins	Alcott	10	7-8
Sohrab and Rustum.....	Arnold	10	8
Age of Chivalry.....	Bulfinch	10	7-8
Geographical Influences in American History	Semmes	10	7-8
Story of Cotton.....	Brooks	9	5-8
Boots and Saddles.....	Custer	9	7-8
War of Independence.....	Fiske	9	6-8
Lincoln, Life of.....	Nicelay	9	7-8
Kidnapped	Stevenson	9	7-8
Lincoln, Life of.....	Tarbell	9	6-8
Ancient Mariner	Coleridge	8	7-8
Child's History of England.....	Dickens	8	7-8
Grandmother Stories	Holmes	8	3-8
Washington and His Generals.....	Headley	8	7-8
Heroes Every Child Should Know....	Mabie	8	6-8
Conspiracy of Pontiac.....	Parkman	8	7-8
La Salle and the Discovery of the Great West	Parkman	8	7-8
Tales of Grandfather	Scott	8	7-8
In the Day of William the Conqueror..	Tappan	8	7-8
Tom Sawyer	Twain	8	7-8
Ben Hur	Wallace	8	7-8
Snowbound	Whittier	8	6-8
Gulliver's Travels for Young Readers..	Chapman	7	6-8
Heroes of Chivalry and Romance.....	Church	7	7-8
Legends of the Middle Ages.....	Guerber	7	7-8
Westward Ho	Kingsley	7	6-8
Barbarian and Noble.....	Lansing	7	6-8
Call of the Wild.....	London	7	7-8
Florence Nightingale	Richards	7	7-8

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Gold Bug	Poe	7	7-8
In the Land of the Cave Dweller.....	Schwatka	7	7-8
Boy Scouts	Seaton	7	7-8
Up from Slavery.....	Washington	7	7-8
Perfect Tribute	Andrews	6	7-8
Four American Poets.....	Cody	6	7-8
Wonderful Tales from Wagner.....	Chapin	6	8
Tale of Two Cities.....	Dickens	6	7-8
Girls' Book of Famous Queens.....	Farmer	6	7-8
Vicar of Wakefield.....	Goldsmith	6	7-8
My Hunt After the Captain.....	Holmes	6	7-8
Alhambra	Irving	6	7-8
Young American	Judson	6	8
Book of King Arthur.....	Macleod	6	7-8
Great Names and Nations, Ancient....	Niver	6	6-8
Great Names and Nations, Modern....	Niver	6	6-8
Captains of Industry.....	Parton	6	7-8
Making of an American.....	Riis	6	6-8
Mrs. Wiggs of the Cabbage Patch.....	Rice	6	7-8
Quentin Durward	Scott	6	8
Talisman	Scott	6	8
Men Who Made the Nation.....	Sparks	6	6-8
England's Story	Tappan	6	7-8
Lives of the Presidents.....	Townsend	6	7-8
Story of China.....	Van Bergen	6	5-8
How It is Done.....	Williams	6	7-8
How It is Made.....	Williams	6	7-8
How It Works.....	Williams	6	7-8
Standish of Standish.....	Austin	5	7-8
Against Heavy Odds.....	Boyeson	5	7-8
Four Famous American Writers.....	Cody	5	6-8
Oliver Twist	Dickens	5	6-8
American Leaders and Heroes.....	Gordy	5	5-8
Stories of American Explorers.....	Gordy	5	6-8
How Our Grandfathers Lived.....	Hart	5	7-8
At the Siege of Quebec.....	Kaler	5	6-8
Last Days of Pompeii.....	Lytton	5	8
New England Girlhood.....	Larcem	5	8
Giant Sun and His Family.....	Proctor	5	7-8
Men of Iron.....	Pyle	5	6-8

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Poems and Tales.....	Poe	5	7-8
Oregon Trail	Parkman	5	8
Rough Riders	Roosevelt	5	8
Trees Every Child Should Know.....	Rogers	5	6-8
North American Indians.....	Starr	5	6-8
In the Days of Queen Victoria.....	Tappan	5	7-8

SUPPLEMENTARY READERS RECOMMENDED BY FIVE OR MORE
OF FIFTY AMERICAN CITIES

Grade I

TITLES OF READERS	AUTHOR OR COMPILER	RANGE	
		NO. TIMES RECOMMENDED	OF GRADES
Hiawatha Primer	Holbrook	51	1-4
Indian Primer	Fox	26	1-3
Brownie Primer	Cox	24	1-2
Art Literature Reader, Book I.....	Grover	17	1-2
Stepping Stones to Literature, Book I..	Arnold	17	1-2
Cyr's Reader, Book I.....		16	1-2
Child Life First Reader.....	Blaisdell	16	1-2
Fairy Reader	Baldwin	15	1-2
Lights to Literature, Book I.....		14	1-2
Beginners' Reader	Bass	12	1-2
New Education Reader, Book I.....		12	1
Wide Awake First Reader.....		11	1
Wide Awake Primer.....		11	1
Outdoors Primer	Grover	11	1
Free and Treadwell Primer.....		11	1
Arnold Primer		10	1
Art Literature Primer.....	Grover	10	1
Baldwin Reader, Book 1.....		10	1-2
Child Life Primer.....	Blaisdell	10	1
Field Reader	Harris	10	1-3
Progressive Reader, Book I.....	Aldrich & Forbes	9	1-2
Holton Primer		9	1
Free and Treadwell First Reader.....		9	1-2
Cyr's Primer		9	1
Action Primer	Baker	8	1
Aldine Reader	Spaulding-Bryce	8	1

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Circus Reader	Puffington	8	1-2
Folklore Primer	Grover	8	1
Folklore Reader, Book I.....	Grover	8	1
Graded Literature Reader, Book L.....	Judson & Bender	8	1
Jingle Primer	Brown	8	1
Riverside First Reader.....	Vansickle & Seegmiller	7	1
Mother Goose Primer.....	Wiley	7	1-2
Graded Poetry, Book I.....	Blake	7	1-2
Choice Literature, Book I.....	Williams	7	1-2
Art Education Reader, Book I.....		6	1
Baldwin Reader, Primer		6	1-2
Children's Classic in Dramatic Form, Book I.		6	1-2
Jones' First Reader.....		6	1-2
Sunshine Primer		5	1
Story Hour Primer.....		5	1
Horace Mann Primer.....	Hervey & Hix	5	1
Blodgett Reader, Primer.....		5	1
Aldine Primer	Spaulding-Bryce	5	1

Grade II

Stepping Stones to Literature, Book II.	Arnold	17	2-3
Art Literature Reader, Book II.....	Grover	16	2-3
Cyr's Reader, Book II.....		12	2-3
Aldine Reader, Book II.....		11	2-3
Field Reader	Harris	10	2-4
Lights to Literature, Book II.....		10	2-3
Wide Awake Second Reader.....		9	2
Riverside Second Reader.....	Van Sickle & Seegmiller	9	2-3
Graded Literature Reader, Book II.....	Judson & Bender	8	2-3
New Education Reader, Book II.....		8	1-2
Free and Treadwell Second Reader....		7	2
Nature Reader No. 1.....	Wright	7	1-2
Baldwin Reader, Book II.....		7	2
Child Life Second Reader.....	Blaisdell	7	2-3
Choice Literature, Book II.....	Williams	7	2-3
Art Education Reader, Book II.....		6	2
Children's Classics in Dramatic Form, Book II		6	2-3
Choice Literature, Book III.....	Williams	6	2-3

TITLES	AUTHORS	RANGE	
		NO. TIMES RECOMMENDED, ALL GRADES.	OF GRADES FOR WHICH RECOMMENDED.
Jones' First Reader.....		6	1-2
Child Lore Dramatic Reader.....	Bryce	5	2
Graded Poetry, Book II.....	Blake	5	2-3
<i>Grade III</i>			
Stevenson Reader	Bryce	18	2-4
Stepping Stones to Literature, Book III.....	Arnold	14	3-4
Art Literature Reader, Book III.....	Grover	14	3-4
Cyr's Reader, Book III.....		10	3-4
Wide Awake Third Reader.....		8	3
Child Life Third Reader.....	Blaisdell	8	3-5
Baldwin Third Reader, Book III.....		8	3-4
Aldine Reader, Book III.....		8	3-4
Dramatic Reader for Lower Grades....	Holbrook	7	2-3
Graded Literature Reader, Book III....	Judson & Bender	7	2-3
Riverside Third Reader.....	Van Sickle & Seegmiller	6	3-4
New Education Reader, Book III.....		6	3
Nature Reader No. II.....	Wright	6	3-4
Graded Poetry, Book III.....	Blake	6	3-4
Choice Literature, Book III.....	Williams	6	2-3
Baker & Carpenter Reader, Book III....		6	3-4
Baker & Carpenter Reader, Book II....		6	3-4
Free and Treadwell Third Reader.....		5	3
Lights to Literature, Book III.....		5	3-4
<i>Grade IV</i>			
Art Literature Reader, Book IV.....	Grover	9	4-5
Lights to Literature, Book IV.....		8	4-7
Baldwin Reader, Book IV.....		6	4-5
Graded Poetry, Book IV.....		6	4
Graded Literature Reader, Book IV....	Judson & Bender	6	4-5
Stepping Stones to Literature, Book IV.....	Arnold	6	4-5
<i>Grade V</i>			
Child Classics, Fifth Reader.....		8	5-6
Graded Literature Reader, Book V.....	Judson & Bender	7	5-6
Baldwin Reader, Book V.....		5	5-6
<i>Grade VI</i>			
Baldwin Reader, Book VI.....		5	6-7
Nature Readers, Book III.....	Wright	5	5-6

CHAPTER IV

HANDWRITING

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In the previous report of the committee under whose auspices this report is prepared, the writer presented the results of a survey of the writing of two schools each in 56 large cities. On the basis of the average scores made in these schools, tentative standards in speed and form in penmanship were formulated. No attempt was made, however, to calculate the deviations among cities, schools, or individuals. The scores were not regarded as sufficiently reliable to make the calculation of deviations possible, because the grading was done by a number of persons. This difficulty was recognized, but it was not possible at that time to overcome it. Since that time, however, the opportunity has presented itself to have a single, trained grader¹ score the papers from a school in each of the 55 cities, and also to make a thorough survey of the writing in three large cities. On the basis of these new results it is now possible to discuss with some assurance, not only general practice, but also the variations in practice, and the significance of these variations for the problem of economy of time. The facts which appear from this study indicate some very definite ways, in the opinion of the writer, in which time may be saved in the teaching of handwriting.

Sufficient evidence has been accumulated to make it very clear that the results obtained in different school systems by the expenditure of substantially the same amount of time in teaching penmanship vary greatly. To give a particular example, one school system gets as good results in both speed and form in the fifth grade that another system, spending somewhat more time, and pursuing much

¹Mr. S. F. Browne, now superintendent at Vinton, Ia.

the same general method of teaching, gets in the seventh grade. Economy must be measured in terms of results, as well as of time. The first system has the choice either of reaching a far higher standard than the second, or of stopping when it reaches the same point as the other, and thus of expending less time. Either course means economy.

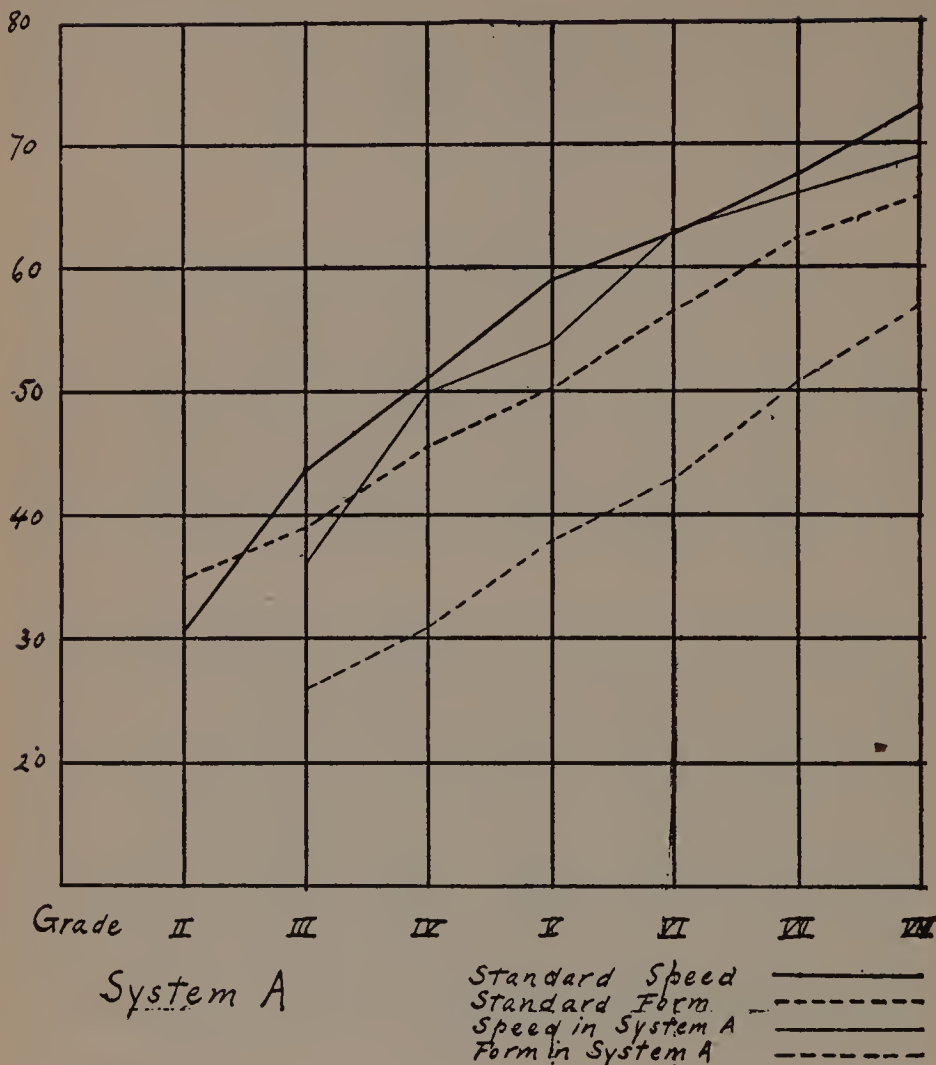
TABLE 1
SCORES IN SPEED AND FORM IN WRITING IN 56 CITIES AND IN THREE LARGE
SCHOOL SYSTEMS

System		SCHOOL GRADE						
		II	III	IV	V	VI	VII	VIII
56 Cities	Speed....	30.6	43.8	51.2	59.1	62.8	67.9	73.0
	Form.....	35.0	39.3	45.6	50.1	56.6	62.3	65.8
A	Speed....	....	36.0	50.0	54.0	63.0	66.0	69.0
	Form.....	....	26.0	31.0	38.0	43.0	51.0	57.0
B	Speed....	33.5	50.1	59.3	64.9	73.0	77.9	84.3
	Form.....	29.4	34.5	44.4	51.7	58.3	61.4	68.4
C	Speed....	31.0	58.0	64.0	66.0	69.6	76.0	72.0
	Form.....	29.9	31.7	36.8	52.1	57.3	62.8	74.2

Typical differences between systems are shown in Table 1 and Charts 1 to 3. The facts may be most clearly seen in the charts. In each case the general practice is represented by the heavy lines. The continuous lines represent speed, and the broken lines, form (slightly revised from the 1914 figures). The light lines represent each of three large cities. The general outstanding fact is that while Systems B and C are equal to the standard in form and above it in speed, System A is slightly below in speed and far below in form. Systems B and C could omit writing drill altogether in the seventh and eighth grades and still equal System A. They could probably omit drill even in the fifth grade, since we can count on some progress even when no drill is given.

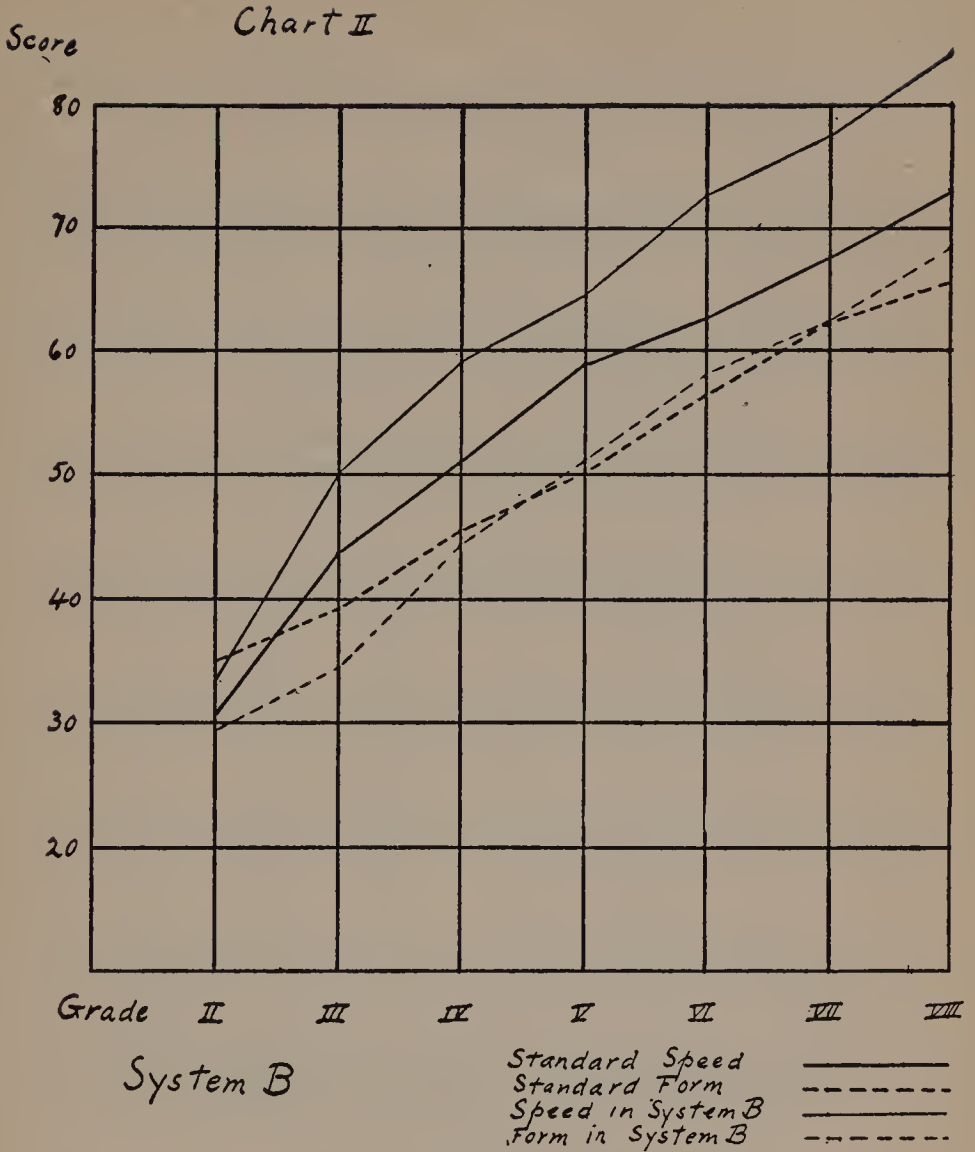
That economy is distinctly needed in some systems as compared with others is clear. How is it to be effected? First, by a taking of stock. No system knows where it stands unless it has made a careful survey of the results of its work. The value of methods which are being pursued, or of those which may be proposed, can only be reckoned when the results are measured. Second, by observing the methods by which other systems obtain superior results and adopting them, or such of them as prove helpful. It is better

Score Chart I



to try one change at a time, and measure the results, than to adopt wholesale all the devices of another system, some of which may be good and others bad.

Of perhaps still greater significance as indicating the direction in which economy of time in the teaching of handwriting may be sought are differences in the results obtained in different schools in the same system. These differences may be more readily de-



tected by supervisory tests, and their causes may be more easily discovered, because the modes of procedure in teaching in the different schools may be more directly compared. Here again, if the lower record made by one school is good enough, the progress in the better school indicates that it could be reached by a saving of time; while if the product of the better school is socially profitable, the poorer school is falling below what it should attain.

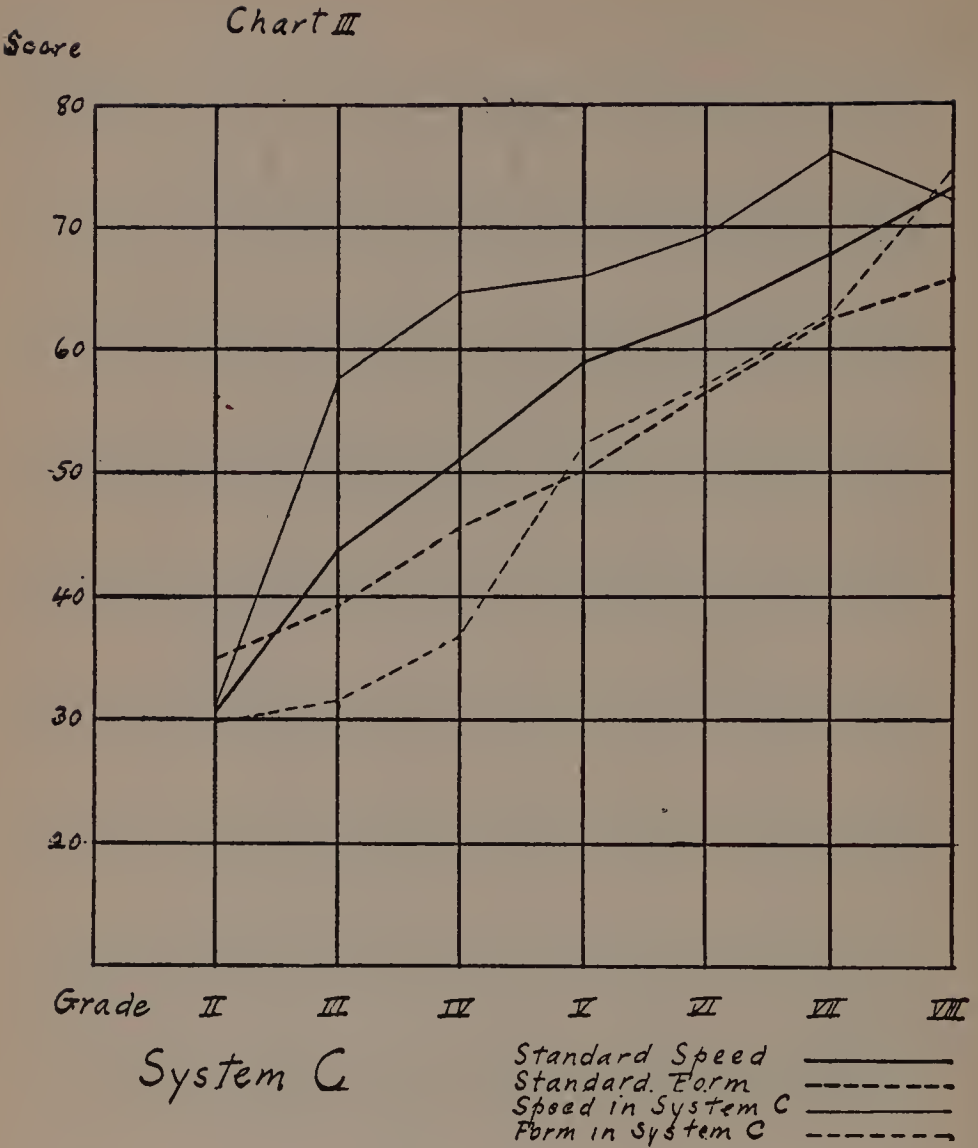


TABLE 2
SCORES IN SPEED AND FORM IN TWO SCHOOLS OF THE SAME SYSTEM

School		SCHOOL GRADE						
		II	III	IV	V	VI	VII	VIII
A	Speed....	39.2	41.5	50.7	55.1	61.9	72.1	80.4
	Form.....	32.5	35.4	52.5	68.3	72.1	75.4	77.9
B	Speed....	39.5	58.1	61.9	59.2	69.0	74.3	74.1
	Form.....	29.7	35.0	33.7	40.0	57.1	54.2	60.0

Score

Chart IV

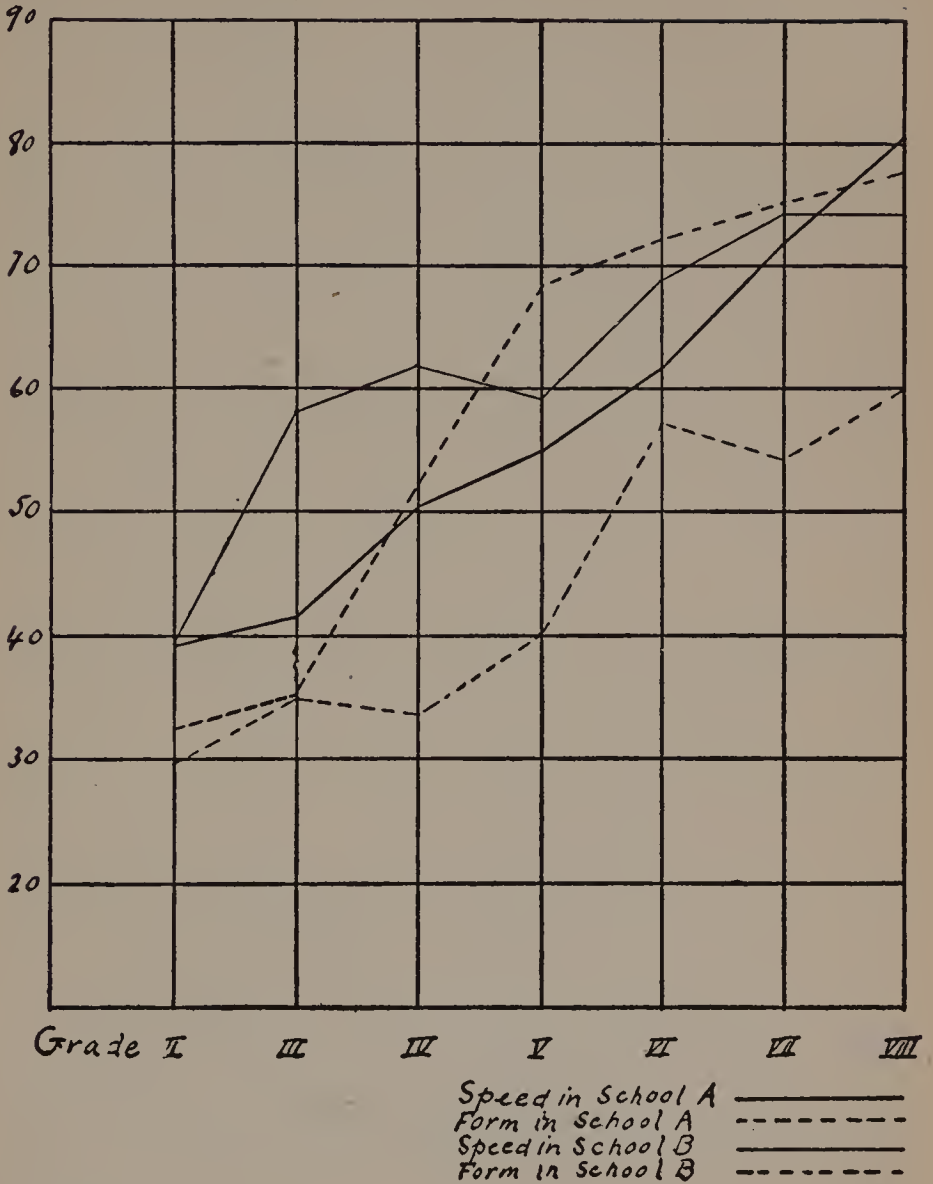


Table 2 and Chart IV show differences between schools in the same system that are by no means as great as could be found. They may be taken as examples of what quite commonly occurs. The light lines represent one school, and the heavy lines the other. The

continuous lines represent speed and the broken lines form. It will be seen that at the end of the pupil's elementary school life, in the seventh and eighth grades, they write at about the same speed in the two schools, but that the form in these two grades in the one school is a full step poorer than the pupils have attained in the fifth grade in the other school. Such differences, put in terms of years of the pupil's school time, mean much for economy of time.

While differences between systems and schools are important, the unit with which we have to deal after all is the individual child. When we study differences between children we are dealing with differences which in the main are due not to education, but to native aptitude. Differences in aptitude may in a measure be overcome by training; but they are not chiefly so produced. The problem here, so far as amount of training is concerned, is to continue a pupil's training as long as the returns are worth the effort, and no longer. This is a rather indefinite principle, so stated. To make it more definite demands a judgment as to what amounts of effort different degrees of excellence in handwriting are worth.

This much may be hazarded in the way of such a judgment. Skill in handwriting is sufficiently worth while for all the normal children in the elementary school—since we cannot predict who will have need of it vocationally and who will not—to make it profitable to continue the training of all those pupils throughout their elementary school course, so long as they have not attained what is now the average attainment of all pupils. On the other hand, unusual skill in writing is not of sufficient general value that it will pay to train any pupils much beyond the point of average attainment. Pupils of superior native ability can easily increase their skill if their calling requires it. The problem of economy, then, is to find those pupils who are being given training beyond the point which is profitable, considering the other uses to which their time may be put, and to limit the time they give to handwriting to that which carries them to the degree of attainment which is determined upon.

In considering a policy with reference to individuals it is necessary to know not simply the average attainment of a group, but also the distribution in attainments of the individuals—and that

in both the characteristics which make up writing excellence, namely, speed and form. For the purpose of this study the distribution of the scores of all the pupils of Grades V to VII by grades in School System B was made out. Grade V was chosen as the lower limit because it would probably be unwise to exclude any of the pupils up to that grade from the regular writing exercises; and Grade VII was taken as the upper limit because it is on the scores made in that grade that elimination would be made in the eighth grade.

Tables 3 to 5 exhibit the distribution according to speed and form of Grades V to VII respectively. The rank in speed is indicated by position in the vertical columns, and the rank in form by position in the horizontal rows. Thus, in Grade V there were three pupils who wrote with a speed of 100 letters per minute or above and whose form was scored as 20 or 25. There were 20 pupils who wrote at a speed of 80 to 89 letters per minute and whose scores in form were 40 or 45, etc.

In order to answer the question which pupils are above standard it is necessary to define what we mean by standard. Must a pupil be above the average in both speed and form, or is unusually high ability in one quality to be allowed to balance deficiency in the other. In a final standard of attainment the pupil ought not to be deficient in either quality, but for the purpose of forming a preliminary judgment of a pupil's ability a combination score is useful. Such a combination score may be obtained by multiplying the score for speed and the score for form. A pupil's combination score may then be compared with the standard combination score. The purpose of this comparison will appear in a moment.

In the Tables, 3, 4 and 5 the heavy, solid line through the table is drawn in such a position that all the scores to the right of it represent individuals whose combination score is practically equal to or above the average combination score for their grade. Thus, while the four children in the fifth grade who write with a speed of 100 letters per minute or above, and whose writing scores 30 or 35, write much more poorly than the average so far as form is concerned, their excessive speed brings their combination score up to the standard. Their score is 3000 or above, while the average is 2961.

The dotted line marks off those children whose combination score is above that of the next grade above, and the broken line those who are superior to the average of the next grade above in both speed and form. By reference to the summaries at the bottom of the tables it will be seen that from 54 to 63 per cent of the

TABLE 3
DISTRIBUTION OF PUPILS IN GRADE V ACCORDING TO BOTH SPEED AND FORM IN WRITING.

		Form								
		20-25	30-35	40-45	50-55	60-65	70-75	80-85	90-95	
Speed	100-109 Above	3	4	5	2	5	1			20
	90-99	1	4	9	6	2				22
	80-89	3	10	20	29	27	9	2		100
	70-79	7	16	30	31	42	8	3		137
	60-69	2	22	38	32	37	12	1		144
	50-59	8	13	29	32	40	12	5	1	140
	40-49	4	5	17	14	22	11	7		80
	30-39	1	1	1	2	4	1	1		11
	20-29				1	1				2

29 75 149 149 180 54 19 1 656

- Above combination V grade standard 54%
- Above combination VI grade standard 88%
- Above VI grade standard in both speed and form 23%
- Could be excused now 23%
- Could be excused if speed and form were balanced 38%

children are superior in their combination scores to the average of their grade, and that from 34 to 45 per cent are superior to the grade above in this respect. From 22 to 26 per cent are superior to the average of the grade above in both speed and form.

TABLE 4
DISTRIBUTION OF PUPILS IN GRADE VI ACCORDING TO BOTH SPEED AND FORM IN WRITING

		Form								
		20-25	30-35	40-45	50-55	60-65	70-75	80-85		90
Speed	100 & above			2	7	4	1			14
	90-99			10	11	10	2			33
	80-89	1	3	30	53	46	17	2		152
	70-79	1	8	24	36	41	26	3		139
	60-69	2	5	16	27	50	27	3		130
	50-59	2	8	10	21	31	10	5		87
	40-49		1	2	5	10	5	1	1	25
	30-39			1	2	1				4
	20-29									
		6	25	95	162	193	88	14	1	584

Above combination VI grade standard 63%
 Above combination VII grade standard 34%
 Above VII grade standard in both speed and form 26%
 Could be excused now 26%
 Could be excused if speed and form were balanced 34%

It would seem to be a reasonable conclusion from these facts that at least a quarter of the children from the sixth grade up have under present conditions sufficient skill in writing to make it more profitable for them to spend the handwriting time either in

TABLE 5
DISTRIBUTION OF THE PUPILS OF GRADE VII ACCORDING TO BOTH SPEED AND FORM IN WRITING

		Form								
		20 25	30 35	40 45	50 55	60 65	70 75	80 85	90	
Speed	100+ wh		1	6	7	12	7			23
	90- 99	1	1	2	5	18	12	3		42
	80- 89		11	17	34	65	40	9	1	177
	70- 79		3	14	26	40	27	5		215
	60- 69		3	8	13	15	28	8	1	76
	50- 59	1	4	7	5	12	8	1		38
	40- 49					4	1	1		6
	30- 39									
	20 29									
		2	23	54	90	156	123	27	2	477

Above combination VII grade standard 60%

Above combination VIII grade standard 45%

Above VIII grade standard in both speed and form 22%

Could be excused now 22%

Could be excused if speed and form were balanced 45%

perfecting some other formal subject in which they are deficient, or in studying some content subject. These pupils are already superior to the average of the next grade in *both* speed and form. The probability is that they would be at least up to standard at the end of the eighth grade without further training. In any case, if they fell behind at any time, they could be restored to the penmanship class.

But the possible saving is still greater than this. There are about 40 per cent who would fall into the same class as those just mentioned, if some of them could only exchange their excessive speed for a little better form, and if others could reduce their score in form somewhat for the purpose of gaining greater speed. And this is no unreasonable demand. Other facts show that the emphasis upon the one or the other of the two characteristics varies greatly from grade to grade, from school to school, and from system to system. Therefore, the balance between the two qualities is susceptible to the influence of training.

If we add to the classes of pupils who already exhibit enough skill in writing, if it were properly directed, to exempt them from further drill, those who might well be stimulated to greater and more successful efforts if they were offered the prize of exemption upon the attainment of a certain definite standard, it is not unreasonable to predict that half the pupils of the three upper grades in this school system might be relieved of writing drill.

On one further matter it is possible to report some results, which, while not final, are very suggestive. In the previous report statistics were given to show that there was apparently no correlation between the amount of time spent in writing drill, when different systems are compared, and the excellence of the results. This conclusion was rendered somewhat uncertain, however, by the multitude of factors which affect progress in writing, and by the fact, already mentioned, that the scores in different cities were not as accurately comparable as is desirable.

A much more accurate study of the effect of different time allowances, because confined to this one factor, can be made by experimentally varying the time allotment in different schools within the same system, and measuring the results. This experi-

ment was made with 182 children through a period of four and a half months in Norman, Oklahoma.² The results are shown in Table 6.

TABLE 6
PER CENT OF PUPILS MAKING VARIOUS AMOUNTS OF GAIN IN 4½ MONTHS

Gains (Ayres Scale)	-20	-10	0	10	20
50 min. per wk.....	1.6	9.7	45.1	37.1	6.5
75 min. per wk.....	2.9	22.1	44.1	28.0	2.9
100 min. per wk.....	1.9	19.3	44.3	32.6	1.9

The pupils who spent 50 minutes per week made as much gain as those who spent twice as much time. If these results are confirmed they indicate that a comparatively short period of drill is as effective as a longer one. Psychological experiments made this conclusion plausible, but the results are presented here more for the purpose of suggesting to others the propriety of extending the experiment than for the purpose of drawing final conclusions.

²By former Supt. F. D. Brooks, now in the Department of Education, Univ. of Oklahoma.

CHAPTER V

A SUGGESTED MINIMAL SPELLING LIST

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In the *Fourteenth Yearbook* of this Society the writer discussed "Minimum Content and Time in Spelling." At that time it was impossible to make conclusive statements owing to insufficient time and inadequate facilities for carrying the work to completion. During the past few years an extensive investigation has been made with a view to determining more definitely, what, and how many words should be included in a minimal spelling list. This article with its appended, tentative, graded list is submitted in the hope that it may prove useful to educators in general, and to the elementary school teacher in particular.

It has been assumed that a usable spelling list should contain, first, words which the children in the elementary school are most likely to use in their daily written work, and second, words which will be most frequently used after the pupil leaves school.

With a view to obtaining such a list a study and compilation were made of the following spelling tests and word lists:

Concrete Investigation of the Material of English Spelling and *The Child's Own Spelling Book*, Franklin W. Jones.

Common Essentials in Spelling, C. K. Studley and Allison Ware.

The Need of Intensive Work in Spelling (unpublished), Algar Woolfolk.

A list of words compiled from children's compositions by Homer J. Smith, published in *The Child and his Spelling*, by W. A. Cook and M. V. O'Shea.

List of Spelling Words, Prepared by the Teachers and Supervisors of the Public Schools of Johnstown, Pa.

“Spelling in the Boston Public Schools,” *McEvoy Magazine*, March, 1915.

Measuring Scale for Ability in Spelling, Leonard P. Ayres.

Champion Spelling Book, Warren E. Hicks.

One Thousand Words, W. E. Chancellor.

The Child and his Spelling, a list chosen from personal correspondence, W. A. Cook and M. V. O’Shea.

Six Thousand Common English Words, R. C. Eldridge.

Probably the most thoroughgoing of the publications examined is Professor Jones’ *Concrete Investigation of the Material of English Spelling*, in which is described the selection of the words for *The Child’s Own Spelling Book*. It presents 4,532 words derived from the study of 15,000,000 words in the themes of 1,050 elementary school children, Grades 2 to 8, inclusive.

Common Essentials in Spelling is a list of 3,470 words prepared by C. K. Studley and Allison Ware of the Chico, California, State Normal School. It is a compilation of the words found in Dr. Leonard P. Ayres’ *Spelling Vocabularies of Personal and Business Letters*, in a list prepared by Miss Effie McFadden and Dr. Frederic Burk of the San Francisco, California, State Normal School, and in the compositions of the children of the Chico, California, District.

A master’s dissertation by Mr. Algar Woolfolk contains 411 words from the written work of children in Grades 3 to 8, inclusive, of the Horace Mann School, New York City, and the public schools of Newark, New Jersey, and Richmond, Virginia. This list includes only words which were misspelled four or more times in the manuscripts examined.

Mr. Homer J. Smith’s list of 1,138 words was derived from a total of 12,500 words used in the spontaneous compositions of elementary-school children in Grades 3 to 8, inclusive. The list omits numerals, all proper nouns, pronouns, prepositions, and some conjunctions.

The spelling list prepared by the teachers and supervisors of the Johnstown, Pennsylvania, public schools has been incorporated in a series of spelling books containing approximately 4,000 words, for use in Grades 1 to 8, inclusive.

The teachers of the Boston public schools were asked to contribute minimal and supplementary word lists for all of the elementary grades. The former contain 840 words; the latter, 2,542.

Dr. Leonard P. Ayres’ *Measuring Scale for Ability in Spelling* contains one thousand words compiled by the author from the most frequently occurring words in (1) his study of the *Vocabularies of Personal and Business Letters*, (2) Cook and O’Shea’s study of personal letters, (3) Eldridge’s newspaper list, (4) “the 353 most frequently occurring words in an aggregate of 100,000” found in the Bible and “various authors” by Reverend J. Knowles of London, England.

The last work investigated to determine the school vocabulary was Hick's *Champion Spelling Book*. Only the words emphasized in daily lessons, 1,872 in all, were used, the assumption being that they were not only the most frequently misspelled, but also the commonest ones in the English language.

An examination of the following lists showed what words would most probably be found in the vocabularies of business people, and, consequently, in the vocabularies of pupils going to work upon the completion of the elementary school, or earlier.

The 542 common words found in Dr. Ayres' study of the *Spelling Vocabularies of Personal and Business Letters* are probably too well known to need discussion.

Mr. W. E. Chancellor's list consists of the 1,000 most common words compiled from his personal correspondence as superintendent of schools.

Professors Cook and O'Shea's list consists of three thousand words from the correspondence of thirteen adults.

The most comprehensive of all the lists examined was that compiled by Mr. R. C. Eldridge of Niagara Falls, New York, from newspapers. It consists of six thousand words from two pages of each of four Buffalo, New York, Sunday papers.

In all of the lists examined the noticeable frequency of a few words indicates that they are the commonest ones in the daily, business, and private correspondence of most people. According to Mr. Eldridge, "the first 750 words" in his list, "with their repetitions, constitute more than three-fourths of all the words on the eight pages from which they have been drawn, and probably a large part of these words will be found in nearly the same proportion in any English conversation or printed matter." Mr. Ayres tabulated the first word in each line of several hundred letters, 23,629 words in all, including repetitions; 542 words with *their* repetitions made up seven-eighths of the total number, while 23,087 with their repetitions constituted the other one-eighth. Reverend Knowles' 343 words with their repetitions comprised 75 per cent of the 100,000 words which he tabulated.

Owing to the wide geographical distribution of the places from which the lists came, they contain many words of purely local significance. The common words which form the 'backbone' of our written vocabulary are found to a large extent in all the lists.

After the lists had been selected, each one was numbered and all the words were checked off in a dictionary. The figure "one" was placed before every word in the dictionary which oc-

curred in the Eldridge list. "Two" was placed before each word that was found in the Jones list. The other ten lists were checked against the dictionary after the same fashion. Altogether, about 30,000 words were checked. By far the greater number occurred in only one list, a somewhat smaller number in two lists, and so on down to 121 that were common to 10 lists, 54 common to 11 lists, and only 9, viz., *again, any, believe, look, many, money, remember, there, and through* that were found in all of the lists.

It was arbitrarily decided to include in the final list all words which occurred in at least six of the twelve lists examined; there were 1309 such words. To this number were added 169 words from the Ayres scale which were not among these 1309 words, making a total of 1478 words.

Arranging the words by grades presented a much greater difficulty than their selection. An examination of eight different graded lists, viz., the California and Johnstown spellers, Hick's *Champion Spelling Book*, and the Boston, New Orleans, Richmond, Smith, and Woolfolk lists revealed much difference of opinion as to where some of the words should be placed. Thus, *accept* was put in the 3d grade list by one author, in the 4th by a second, in the 5th by a third, in the 6th by three, and in the 7th by two. It appears among the 6th grade words in the appended list. *Address*, which appeared in three 5th, one 6th, and one 8th-grade list, has been placed in the 5th grade of the appended list. *Am*, which was found in 1st, 2d and 5th-grade lists (most frequently in the last,) was placed in the 5th grade. Each word in the entire list was assigned to the grade agreed upon by the majority of authors investigated, although in some cases the placing appeared to be pedagogically unsound. Some words, about whose location there was an exact division of opinion, were placed in the lowest grade mentioned! others could be classified very readily because of the close agreement as to where they belonged. As was expected, most of the words fell in the primary-grade lists, a considerably smaller number in the intermediate-grade lists, and comparatively few in the grammar-grade lists. The distribution was as follows: 343 words in the second grade, 408 in the third, 216 in the fourth, 187 in the fifth, 157 in the sixth, 131 in the seventh, and 38 in the eighth.

Obviously many of the words, such as *am*, are not properly placed and therefore the list is not the *best* for school purposes. Lists are now being tried in the public schools of Antonito, Boulder, Carbondale, Central City, Cripple Creek, Del Norte, Fowler, Goldfield, Loveland, Manzanola, Matheson (rural school), Pueblo, and Victor, Colorado; Douglas, Wyoming; Hershey, Nebraska, and in one building in St. Louis, Missouri. Reports so far seem to indicate that there will be little alteration in the assignment of words to the several grades. It is hoped that a year's use of the words in the actual school situation by capable, conscientious teachers will result in a highly satisfactory rearrangement. The writer invites the cooperation of superintendents, principals, and teachers who would like to use the list and to assist in its revision.

A MINIMAL SPELLING LIST, ARRANGED BY GRADES

The words indicated by asterisk are the 169 found in Ayres' *Measuring Scale for Ability in Spelling*, but in fewer than 6 of our 12 lists.

Second Grade

(343 words)

add	been	bring	cold
after	bear	brother	comb
ago	bed	*brought	come
air	before	burn	copy
alone	beg	but	cost
also	*began	buy	could
am	begin	by	count
among	*begun	call	cow
an	belong	came	*cover
ankle	best	*can	cross
are	better	candy	cup
arm	bill	card	cut
as	bird	care	dark
ask	black	*carry	dead
asleep	block	cart	dear
at	blue	case	December
ate	boat	cat	deep
August	body	catch	did
aunt	boil	cent	dirt
away	book	chair	do
bad	both	change	done
ball	box	chicken	doctor
*band	boy	church	*does
bank	bread	*claim	dog
basket	brick	clerk	dollar
be	bright	coat	don't

door	go	it	root
down	goes	jump	rose
draw	going	keep	round
dress	gone	kind	run
drink	*God	knew	said
drop	gold	knife	saw
*drown	good	laid	say
drowned	got	large	*says
dust	grass	late	school
each	great	lay	seed
ear	green	lazy	seven
early	ground	leaf	shall
east	grow	leg	she
*eight	guess	lesson	shoe
even	had	let	shut
*evening	half	letter	sick
ever	hair	long	sister
every	hand	*lost	sit
eye	hang	make	six
face	*happen	making	sky
fair	happy	me	snow
fall	hard	meet	so
far	has	men	soap
fast	hat	more	*stole
father	have	mother	store
feed	having	mouse	story
feet	he	mouth	study
fell	head	my	tail
fence	hear	near	take
few	heard	never	teeth
fill	heart	new	ten
find	*held	next	than
fine	help	nice	thank
first	her	*nine	that
*five	here	no	the
fix	high	*nor	theater
flower	hill	nose	them
fly	him	not	then
fowl	himself	of	these
foot	his	off	they
for	home	on	this
found	horse	one	three
*four	*hot	only	time
*fourth	house	our	to
freeze	how	out	told
fresh	hungry	own	took
from	hurt	paper	top
front	I	pencil	two
full	ice	pink	under
game	if	push	up
garden	ill	put	us
get	in	*ran	was
getting	into	read	wash
girl	invite	red	water
give	is	road	we

well
went
were
west
what

white
who
will
wind
window

word
would
write
writing
wrote

yes
you
young
your

Third Grade

(408 words)

about
above
across
act
addition
afraid
again
*alike
all
alley
allow
almost
along
always
animal
another
answer
any
anyway
anything
appear
apple
April
around
arrest
attend
autumn
avoid
baby
back
banana
barn
bath
beauty
because
become
behind
beneath
beside
between
big
bite
blossom
board
born
bottom

bought
branch
break
breakfast
breath
bridge
broke
brown
build
built
bundle
bury
busy
butter
button
cake
car
*carried
caught
center
chase
child
children
chimney
choose
*Christmas
circle
city
*cities
clean
climb
close
cloth
*clothing
coarse
color
coming
common
company
control
cook
corner
cotton
cough
*country
cousin

crowd
daily
danger
date
daughter
deserve
die
*died
dinner
dish
divide
double
drive
*driven
duty
earn
earth
*easy
eat
egg
else
empty
end
enough
except
excuse
explain
fail
family
farm
farther
*February
feel
fellow
field
fierce
figure
floor
flour
fond
*forget
fortune
*forty
*Friday
friend
fruit

gave
glad
good-by
grade
grain
grocery
hall
heavy
herself
hold
hole
hoarse
honest
honey
hope
hour
hundred
inch
*inform
inquire
intend
iron
island
*its
jail
June
July
just
kill
kitchen
knee
knock
knot
know
lady
last
laugh
learn
leather
leave
left
lemon
lightning
like
listen
little

live	other	ship	traction
look	ought	short	tree
lose	over	should	truly
lot	pair	show	truth
loud	parlor	side	try
love	part	sing	tried
low	party	sleep	Tuesday
machine	people	sleigh	turn
many	perhaps	small	twelve
mark	pick	sold	ugly
master	picture	some	uncle
measure	pie	something	until
meat	piece	*sometimes	upon
mice	place	soon	use
might	plain	sorry	used
mile	play	south	vacation
milk	pleasant	speak	very
mill	point	spell	voice
minute	poor	spring	wagon
miss	pound	stand	wait
mistake	pretty	star	walk
*mister	*primary	stay	wall
mistress	prompt	still	want
Monday	*prove	stood	warm
money	quart	stopped	watch
month	quarter	street	way
morning	quick	*struck	wear
*motion	quiet	sugar	week
move	quite	suit	wet
much	race	summer	wheel
music	raise	sun	when
must	reach	Sunday	where
myself	ready	supper	whether
name	recess	sure	which
naughty	remember	swim	while
*nearly	*rest	table	whisper
need	ribbon	talk	whistle
news	ride	taste	whole
nickel	right	teacher	why
night	ring	tell	winter
ninth	room	themselves	wish
noise	rough	there	with
noon	running	thing	without
north	safe	think	woman
nothing	*salt	third	whose
notice	Saturday	thought	wood
now	scissors	thread	work
nut	see	threw	worth
obey	*seen	through	wrap
o'clock	sell	throw	wrapped
October	send	Thursday	written
often	sent	tire	yard
old	September	tired	year
once	severe	today	yellow
open	shake	toward	yesterday
orange	*shed	town	yet

Fourth Grade

(216 words)

able	fight	neither	shoulder
account	finish	ninety	since
ache	fire	number	sir
according	food	orchard	skin
age	form	outside	slide
alarm	forward	palace	smoke
allowed	furnace	parade	soldier
angel	furniture	park	son
attack	grammar	pass	stairs
author	*grand	past	start
beginning	guard	pay	station
believe	guide	peace	stone
biscuit	gun	period	stop
blanket	hammer	piano	straight
breathe	healthy	pigeon	strong
burglar	heat	please	such
bushel	history	pleasure	sweep
cabbage	hoping	pledge	taught
*camp	*husband	pocket	teach
canoe	human	poem	term
capital	idea	poison	thick
*capture	important	police	those
carriage	Indian	post	though
chain	inside	potato	thousand
*chief	*itself	practice	throat
chocolate	justice	present	thunder
circus	kept	president	together
civil	king	pumpkin	tomorrow
class	labor	quarrel	tongue
club	land	question	too
coffee	lawn	rain	track
collar	life	raisin	train
*contract	light	*rapid	travel
corn	lying	reason	traveler
cottage	line	receive	trial
country	linen	recent	trip
dentist	lonesome	regard	trouble
depot	manage	*region	umbrella
desert	man	remain	unless
discover	March	roar	village
dismiss	market	roof	visit
ditch	matter	*rule	visitor
division	may	same	waist
dream	*mayor	saucer	war
engine	mean	scholar	weather
enjoy	metal	second	weigh
escape	middle	seem	win
*examination	mind	sentence	women
expect	mine	separate	won
failure	mischief	set	world
fashion	most	several	wreck
fear	mountain	shadow	wrong
feather	*navy	sew	wonderful
felt	neighbor	shore	wonder

Fifth Grade

(187 words)

address	direction	match	sense
afternoon	disappoint	maybe	serious
against	dispute	medicine	serve
agreeable	*district	merely	settle
already	doubt	modern	shepherd
although	*drill	narrow	sight
angry	edge	nature	sincerely
anxious	equator	nephew	size
army	*especially	none	song
arrive	everything	November	square
article	exercise	object	*stamp
attention	expense	occupy	state
automobile	*fact	ocean	steal
auto	familiar	opinion	stock
awful	famous	*organize	strange
bathe	favorite	*organization	succeed
beat	fever	orphan	success
*became	fifth	ourselves	*sudden
beautiful	*final	page	suggest
bicycle	finger	passenger	supply
birth	*firm	person	suppose
blow	*folks	persuade	surprise
bruise	forest	picnic	tear
business	*free	pin	telegraph
*cannot	frightened	plant	terrible
carpet	*gentleman	position	Thanksgiving
cause	glass	pour	*thus
cement	government	press	ticket
chance	handkerchief	price	tonight
coast	heaven	problem	true
collect	height	promise	union
column	hospital	proper	useful
comfort	*immediate	railroad	usual
concern	*indeed	rather	vegetable
concert	*injure	real	*victim
couple	instead	reply	view
course	interest	rise	*vote
court	jealous	river	wake
cushion	journey	roll	waste
damage	judge	saddle	wave
dangerous	language	sail	weak
*dash	lawyer	scratch	Wednesday
debt	length	sea	wide
defeat	level	secret	within
describe	loose	section	wound
destroy	*loss	select	woolen
different	mail		

Sixth Grade

(156 words)

absent	*elect	office	review
accept	*election	*omit	route
acquaintance	entertain	order	scene
advantage	*entitle	parentage	scenery
advice	*entrance	particular	search
*agreement	*express	partner	season
altogether	extreme	patient	sheriff
appetite	factory	pavement	shine
application	favor	peculiar	sign
arrival	finally	physical	silver
assist	foreign	pity	special
assistance	freight	plan	spend
*athletic	further	plenty	spoil
attempt	future	political	spread
avenue	general	possible	steady
baggage	genuine	power	stomach
balance	glorious	prefer	strength
breast	guest	principal	student
brief	imagine	principle	*support
cabin	immediately	print	*tax
calendar	importance	prison	telephone
captain	impossible	private	temperature
catalogue	innocent	*progress	their
certain	jewel (4)	*property	thermometer
charge	least	punish	thin
citizen	*local	purpose	thorough
clear	luncheon	pursue	*total
climate	*manner	rate	trust
coal	material	really	unable
*condition	mere	receipt	understand
contain	museum	refer	*unfortunate
decision	national	relief	variety
*develop	necessary	repair	valuable
diamond	newspaper	report	volume
dictionary	note	request	wander
difference	*obedience	*respectfully	weight
*direct	oblige	restaurant	wife
due	occasion	result	wire
during (5)	odor	return	

Seventh Grade

(131 words)

accident	appoint	benefit	character
acknowledge	appreciate	bouquet	check
*action	arrange	campaign	collego
*adopt	arrangement	candidate	*colonies
advertise	association	*career	*combination
amount	assure	catarrh	command
*annual	*await	cemetery	committee
apply	bargain	century	complete

compliment	effort	mortgage	remedy
conduct	*elaborate	nuisance	salary
*conference	*emergency	*objection	secretary
*correction	*empire	.obtain	service
consider	*enter	offer	*session
continue	*evidence	opportunity	similar
convenient	experience	opposite	signature
*convention	*flight	perfect	single
*cordially	gymnasium	personal	sleeve
criticise	honor	physician	society
cylinder	illustrate	*population	*soft
deal	*increase	practical	sole
death	information	prairie	splendid
*debate	interrupt	*preliminary	*steamer
decide	*investigate	prepare	subject
*declare	invitation	preparation	sufficient
*degree	issue	privilege	superintendent
*delay	judgment	*publish	system
desire	knowledge	recognize	tariff
*difficulty	license	recommend	*testimony
disappear	manufacture	reference	therefore
distance	marriage	*refuse	usually
*distribute	mention	relative	*various
education	minister	religion	yield
effect	moment	remark	

Eighth Grade

(33 words)

affair	*discussion	*income	*recover
allege	*employ	*majority	*responsible
argument	*engage	member	*retire
attendance	*entire	*official	secure
camphor	*estate	proceed	*senate
*circular	*estimate	*provide	*summon
*circumstance	forenoon	*provision	treasure
*convict	*grant	public	vacant
corpse	*improvement	*publication	*witness
department	*include		

CHAPTER VI

MINIMAL ESSENTIALS IN ELEMENTARY LANGUAGE AND GRAMMAR

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There are at least five points of view from which the problem of determining the minimal elements in a course of study in grammar for the elementary grades may be attacked. Each has its own technique and all produce curriculums which have grammatical elements in common, but in which there are different elements.

The five points of view referred to are the following: (1) discipline of mental activities, (2) a knowledge of the structure of thought as exhibited in the sentence, (3) the understanding of literature, (4) the improvement of speech through the artistic use of grammatical information, and (5) the improvement of speech through the elimination of errors. Five differs from four in this respect. Four seeks to raise speech which is grammatically correct to the plane of rhetorical effectiveness through a knowledge of grammatical elements which may become tools with which to manipulate the expression of ideas. Five aims to study the errors of speech and present a body of information which may be used to make the language as spoken, grammatically accurate.

The methods of investigation utilized in each case have elements in common. The first essential is to analyze the terms in order to tabulate the elements and arrange these in the order of their importance. The arrangement in order of importance is necessary because in practical use, it is usually found that the element of time for study makes it impossible to teach all the items in any such list. In the case of the discipline of mental activities, a psychological analysis of mental activities must be made in order to obtain a list and in the list the function of each item and its bearings must be determined in order to evaluate the elements and designate their relative importance. In the case of the use of

grammar as a means of studying the structure of thought, a logical or psychological study of thought processes and a philological study of the sentence must be made and the elements evaluated. In the study of grammar as an aid to the appreciation of written thought it is necessary to make an exhaustive examination of the use of grammatical forms, to evaluate these forms and to arrange them in order of importance. A study of the elevating of speech from grammatical accuracy to rhetorical effectiveness necessitates a study of the technique of rhetorically effective writers and speakers in the manipulation of grammatical forms and rules. The forms and rules so manipulated must, as in the case of the others, be evaluated and arranged in order of importance. In the study of grammar for the elimination of errors, it is apparent that the first step is to ascertain the rules which are broken and to determine their relative importance.

The second step in the procedure is the designation and evaluation of those grammatical elements which will give assistance in reaching the objectives discerned from each point of view. Such lists of elements or curriculums will in all probability have many common items; but on the other hand, some will have elements not found in others, and probably in no two curriculums will the items be arranged in the same relative order of importance. For instance, if training in delicacy of discrimination is one element in the list of mental activities, we should find the stress laid upon those fine points of grammar which would give practice in discrimination of shades of meaning; or among those elements which are used in attaining rhetorical effectiveness, participial constructions and infinitives would have a position of high honor, while in the use of correction of errors as a basis of selection, we should find the participles and infinitives lightly regarded and the simpler tense form of verbs and cases of pronouns evaluated highly.

In determining the minimal essentials of the curriculum in grammar for the grades, the third step consists of an investigation of the values and controls of the children that are to be taught. This, obviously, will affect the method, but just as certainly must it affect the content of the course. Rules of grammar are broken by first grade children, and a knowledge of the rules presumably

would be of assistance in the correction of these, but the lack of both interest and ability forbids our inclusion of any aspect of formal grammar in their course of study.

One purpose of this report is to describe and illustrate a method of constructing a grammar curriculum upon the basis of the errors of school children. A second purpose is to give a descriptive (rather than critical) survey of several studies of the language errors of children which have appeared prior to the time of writing.

The following list embraces all studies of which the writer knows.¹ This classification shows that the studies have appeared almost simultaneously, and are widely separated geographically; that eight are studies of oral errors, four of written errors; that teachers, except in one case, were used to collect the oral errors, and that four of the studies were of grammatical errors only.

STUDIES OF THE LANGUAGE ERRORS OF SCHOOL CHILDREN

STUDY	DATE OF PUBLICATION.	ORAL OR WRITTEN.	METHOD OF COLLECTING ORAL ERRORS.	LANGUAGE OR GRAMMAR.
1. First Kansas City Study	Jan. 1915	Both	By teachers	Grammar only
2. Northern Illinois Study	May 1915	Both	By teachers	Both
3. Boise Study	June 1915	Oral	By teachers	Both
4. Second Kansas City Study	June 1916	Written	.....	Both
5. Cincinnati Study	Sept. 1916	Oral	.....	Both
6. Speyer School Study..	Unpub.	Oral	Stenographer's report	Both
7. Bonham, Texas, Study	"	Both	By teachers	Grammar only
8. Columbia, Missouri, Study	"	Oral	By teachers	Grammar only
9. Detroit Study	"	Oral	By teachers	Grammar only

¹When this chapter was in print, a study made by Guy M. Wilson in Connersville, Indiana, in 1908, came to the writer's attention. Oral grammatical errors were classified as verbs, pronouns, adverbs, and miscellaneous. Of the 226 errors tabulated, 81% were found to be in verbs, 13% in pronouns, and 6% in adverbs. This study is found in the Connersville School Board Report for 1908.

LANGUAGE STUDIES

Superintendent O. S. Thompson, of Waukegan, Illinois, collected material² from the four upper grades of the schools of Batavia, Chicago Heights, River Forest, Rochelle, Streator, and Waukegan, and from the Grover Cleveland School and the Frances Parker School of Chicago. Oral errors, collected for two weeks by the teachers of the Waukegan schools, and 2500 written compositions, in which each child of all the schools wrote under normal conditions the completion of an unfinished story, furnished the material for the study.

From this study Superintendent Thompson finds that more attention should be paid in oral language to the following list of topics, arranged in the order of frequency of error.

TABLE 1

Topics to be Emphasized in the Oral Language of the Children of the Waukegan, Illinois, Schools, Arranged in Order of Importance as Determined by Relative Frequency of Error.

Redundancy (Syntactical)

Double Negatives

Verbs

Tense

Present for past tense

Past participle for past

Number

Was for *were*, *don't* for *doesn't*

Wrong Forms

Ain't

Can for *may*, *got* for *have*

Leave for *let*, *bring* for *take*

Left for *let*

Enunciation forms

Ask for *asked*, *taken* for *taking*

Pronouns

Me for *I*, *who* for *whom*

Them for *those*

Those kind for *that kind*

²Essentials of Elementary English, *Tenth Yearbook of Superintendent's and Principal's Association of Northern Illinois*, May 1915.

Prepositions
In for into
 Articles
A for an
 Adjectives and Adverbs
 Confusion
 Comparison

The errors in written work were classified by parts of speech and by grades and their relative frequency determined. This is shown in Table 2.

TABLE 2

RELATIVE ORDER IN FREQUENCY OF ERRORS IN WRITTEN WORK MADE BY CHILDREN OF SIX ILLINOIS SCHOOL SYSTEMS AND TWO SCHOOLS OF CHICAGO (after Thompson)

Type of Error	Grade V	Grade VI	Grade VII	Grade VIII
Verbs.....	1	2	1	1
Omissions.....	2	1	2	2
Connectives.....	3	3	—	3
Incomplete sentences.....	4	5	6	4
Homonyms.....	5	4	3	6
Pronouns.....	6	6	4	5
Prepositions.....	7	8	7	7
Repetitions.....	8	7	5	8
Antecedents.....	9	9	8	11
Double negatives.....	10	12	11	—
Adjectives for adverbs.....	11	11	10	13
Inverted constructions.....	12	—	13	12
Articles.....	—	10	9	9
Redundancy.....	—	—	12	10

Dash means "not mentioned."

Table 2 shows the types of error and the grades in which the errors were found while the arabic numbers in the columns show the rank of these in terms of the frequency of errors observed. Verbs rank highest in number of errors in Grades V, VII, and VIII, and second in Grade VI.

Superintendent C. S. Meek directed a study of oral errors in the Boise schools. The teachers collected and listed the errors heard in the schoolroom, in recitation and on the play ground.³

"The lists of this first report were collated and classified. When clasified, the fact which stood out most clearly was that the multitudinous errors in speech are due to the frequent repetition of a few incorrect forms. Practically all the errors reported could

³Special Report of the Boise Public Schools, June, 1915.

be classified under six heads; namely, verb errors, double negatives, mispronunciations, misuse of pronouns, adverb errors and colloquialisms. Mispronunciations in this classification includes those which may properly be called language errors, as *jist* for *just*, *git* for *get*, *ketch* for *catch*, and others of like nature and does not include mispronunciations due to unfamiliarity with a word. In this effort there was no attempt to deal with the fine points, the niceties of speech. Only the gross and glaring crudities of English were considered.

“In detail, this classification was as follows:

1. Verbs
 - a. Past and perfect participle confused
 - b. Misuse of *had* and *got*, use of *ain't*
 - c. Agreement with subject in number; e.g., *He don't*
 - d. Sequence of tenses
 - e. Uses of *shall* and *will*
 - f. Use of *and* with infinitive; e.g., *try and go*
2. Double negatives
3. Pronunciations—*Just*, *get*, final *g*, *for*, *asked*, *February*, *height*
4. Pronouns:
 - a. Case forms:
 - (1) In compound subject
 - (2) Object of preposition or verb
 - (3) After copula
 - (4) In compounds; e.g., *themselves*
 - b. Pronoun used for adjective; e. g., *them books*
 - c. In double subjects; e.g., *John he did the work*
 - d. Indefinite reference
5. Adverbs:
 - a. Use of adjective for adverb
 - b. *This here*, *that there*, etc.
6. Colloquialisms, provincialisms:

Lots for *many* or *much*; *mad* for *angry*; *learn* for *teach*; *get* with infinitive, as, *get to go*; *like* as a conjunction, as, *He felt like he could do it*; introductory *well*, *why*, *now*, *so*

“This outline was given to the teachers and they were asked to watch for errors on these points for a given time and report again. This second report specified the errors noted under each head of

the outline and recorded also the comparative frequency of occurrence. When these reports were collected and tabulated, it was possible to tell what our situation was. As yet, no scientific exactness can be claimed for the results obtained in this way. Though there was not scientific accuracy in obtaining the data, there is such uniformity of results in the reports as to justify certain conclusions.

TABLE 3
CLASSIFICATION OF ERRORS (after Meek)

Grades	1	2	3	4	5	6	7	8	All
1. Verbs	49.5	48.1	32.8	34.0	40.9	43.7	37.0	36.6	40.1
2. Double negatives	3.6	3.3	3.2	3.2	3.7	3.3	3.2	2.9	3.4
3. Pronunciation	16.0	18.1	21.8	22.5	16.6	21.6	24.7	17.3	20.4
4. Pronouns	18.8	17.1	16.8	17.2	19.3	14.9	14.9	18.3	17.2
5. Adverbs	5.5	4.7	5.8	6.1	6.4	5.2	5.8	6.9	5.8
6. Colloquialisms, etc.	8.2	9.0	14.9	14.8	12.9	11.5	12.3	18.3	12.9

“Table 3 shows the percentages of errors in each grade that are due to each of the six classes of mistakes. Of the total errors reported from the eight grades 40.1 per cent are verb errors, 3.4 per cent are double negatives; mispronunciations cause 20.4 per cent, the misuse of pronouns 17.2 per cent, adverb errors 5.8 per cent, and colloquialisms 12.9 per cent. According to these totals over sixty per cent of the errors are due to misuse of verbs and mispronunciations.”

A classification of the written errors of children of the third grade of Kansas City has been made by Annette Betz and Esther Marshall.⁴ Their purpose was to obtain a working classification of written errors in both language and grammar. They read compositions to the point where new types of error ceased to appear, and consequently, since this reading included only 112 pages, too little ground was covered to make the relative percentages of frequency of error very reliable.

The entire list of errors was divided into three parts and classified as: (1) punctuation, (2) language, and (3) grammar. The line of division between the two latter was an arbitrary one; grammar and language overlap, and some points may belong to either or to both. It was felt that the line of division was of no great importance in this case.

⁴English Journal, June, 1916.

TABLE 4

CLASSIFICATION OF THE WRITTEN ERRORS IN LANGUAGE AND GRAMMAR OF THIRD-GRADE CHILDREN IN KANSAS CITY (after Betz and Marshall)

		Per cent	Per cent
<i>Punctuation 55 per cent</i>			
I.	Mistakes in the use of the capital.....	22.	....
	a. Common nouns capitalized.....	....	4
	b. Pronouns capitalized.....	....	.2
	c. Verbs and other words wrongly capitalized.....	....	2.
	d. Capital omitted at beginning of sentence.....	....	8.
	e. Capital omitted in proper names.....	....	4.
	f. Capital omitted in titles.....	....	.4
	g. Capital omitted in quotations.....	....	.5
	h. Pronoun <i>I</i> not capitalized.....	....	.2
	i. Capital omitted in salutation.....	....	....
	j. Capital in middle of sentence.....	....	3.
II.	Mistakes in the use of the period.....	10.	....
	a. Period omitted at end of sentence.....	....	8.
	b. Period used in middle of sentence.....	....	1.
	c. Period omitted after titles and abbreviations.....	....	1.
III.	Mistakes in the use of the comma.....	11.	....
	a. Comma omitted in series of clauses.....	....	.1
	b. Comma omitted in series of words.....	....	.4
	c. Comma omitted after dependent clauses.....	....	4.
	d. Comma omitted after introductory words.....	....	.2
	e. Comma omitted after word of address.....	....	.4
	f. Comma omitted after parenthetic expressions.....	....	.1
	g. Comma omitted before a quotation.....	....	2.
	h. Comma used when not necessary.....	....	.7
	i. Comma used at end of sentence.....	....	1.
	j. Comma omitted before <i>for</i> and <i>so</i>.....	....	.3
	k. Comma omitted between city and state.....	....	.7
	l. Comma omitted before or after an appositive.....	....	1.
IV.	Mistakes in the use of the interrogation point.....	.6	....
	a. Interrogation point omitted.....	....	.1
	b. Interrogation point used when not necessary.....	....	.5
V.	Mistakes in the use of the exclamation point.....	.1	....
	a. Exclamation point omitted.....	....	.1
VI.	Mistakes in the use of the semicolon.....	2.	....
	a. Semicolon omitted.....	....	1.9
	b. Semicolon used in wrong place.....	....	.1
VII.	Mistakes in the use of quotation marks.....	2.1	....
	a. Quotation marks omitted.....	....	2.
	b. Quotation marks used in wrong place.....	....	.1
VIII.	Mistakes in the use of the apostrophe.....	6.	....
	a. Apostrophe omitted in possessive nouns.....	....	3.9
	b. Apostrophe omitted in contractions.....	....	1.9
	c. Apostrophe used when not necessary.....	....	.2
IX.	Mistakes in the use of the colon.....	.6	....
	a. Colon omitted.....	....	.6
X.	Mistakes in the use of the hyphen.....	.6	....
	a. Hyphen omitted.....	....	.1
	b. Hyphen used in wrong place.....	....	.5
<i>Language 17 per cent</i>			
XI.	Violation of Unity.....	6.	....
	a. Sentences too short for unity		
	1. A dependent clause written as if it were an independent clause.....	....	1.

TABLE 4—Continued

	Per cent	Per cent
2. A phrase written as if it were a sentence.....	....	.2
3. The subject of one sentence given in the preceding sentence . . . . .	....	.1
b. Sentences too long for unity.....	....	4.7
XII. Lack of coherence due to	4.	....
a. Omission of nouns.....	....	.7
b. Omission of verbs.....	....	1.
c. Omission of relative pronouns.....	....	.7
d. Omission of prepositions.....	....	.4
e. Omission of personal pronouns . . . . .	....	.4
f. Omission of conjunctions.....	....	.5
g. Omission of adverbs.....	....	.1
h. Omission of adjectives:.....	....	.1
i. Omission of the article.....	....	.1
XIII. Mistakes in paragraphing.....	1.	....
a. Lack of paragraph division.....	....	.8
b. Wrong indentation . . . . .	....	.1
c. Paragraph for every sentence.....	....	.1
XIV. Syntactical Redundancy	4.	....
a. Double construction . . . . .	....	.4
b. Double preposition . . . . .	....	.7
c. <i>Has got</i> . . . . .	....	.7
d. Miscellaneous . . . . .	....	2.2
XV. Improprieties . . . . .	.5	.5
XVI. Monotonous sentence structure.....	.3	.3
XVII. Words given wrong position in sentence.....	.4	....
a. <i>Only</i> in wrong place.....	....	.1
b. First personal pronoun placed first in a series.....	....	.3
XVIII. Mistakes in English idiom.....	.7	.7
XIV. Mistakes in logic.....	.1	.1
<i>Grammar 28 per cent</i>		
XXI. Mistakes in verbs.....	13.	....
a. Wrong form for the third person singular.....	....	.7
b. Mistakes in tense.....	....	7.
1. Present for past tense.....	....	.5
2. Wrong form of past tense.....	....	2.
3. Confusion of past tense and past participle.....	....	.2
c. Wrong sequence . . . . .	....	3.
d. Wrong verbs . . . . .	....	.1
e. Wrong mode . . . . .	....	.1
f. Wrong infinitive form.....	....	....
XXII. Mistakes in nouns.....	1.	....
a. Singular for plural.....	....	.6
b. Plural for singular.....	....	.2
c. Wrong formation of plural.....	....	.2
XXIII. Lack of agreement of subject and verb.....	2.	....
a. Plural subject and singular verb.....	....	1.8
b. Singular subject and plural verb.....	....	.2
XXIV. Mistakes in case.....	2.	....
a. Mistakes in personal pronouns.....	....	1.6
b. Mistakes in relative pronouns.....	....	.3
c. Mistakes in possessive nouns.....	....	.1
XXV. Mistakes in antecedents.....	1.	....
a. Indefinite antecedents . . . . .	....	.8
b. Singular pronoun with plural antecedent.....	....	.2

TABLE 4—Continued

	Per cent	Per cent
XXVI. Double negative .....	.7	.7
XXVII. Mistakes in comparison of adjectives.....	.3	....
a. Double superlative2
b. Wrong comparative form.....1
XXVIII. Confusion of parts of speech.....	1.	....
a. Adjective for adverb.....5
b. Adverb for adjective.....2
c. Pronoun for adjective.....
d. Preposition for conjunction.....2
e. Conjunction for article.....
f. Conjunction for adverb.....
g. Adjective for noun.....
XXIX. Prepositions wrongly used.....	2.	....
XXX. Mistakes due to likeness of sound.....	5.	....
a. <i>to</i> for <i>too</i>7
b. <i>there</i> for <i>their</i>5
c. <i>their</i> for <i>there</i>4
d. <i>to</i> for <i>two</i>2
e. <i>an</i> for <i>and</i>2
f. <i>where</i> for <i>were</i>2
g. <i>new</i> for <i>knew</i>2
h. <i>no</i> for <i>know</i>2
i. <i>cause</i> for <i>because</i>2
j. <i>too</i> for <i>to</i>1
k. <i>the</i> for <i>they</i>1
l. <i>two</i> for <i>too</i>1
m. Miscellaneous	2.

Table 4 should be read as follows:⁵ Fifty-five per cent of all errors found were errors in punctuation; 22 per cent of all errors found were errors in the use of capitals; four per cent of all errors found were caused by the capitalization of common nouns, etc.

A study of oral errors was made in Cincinnati by Isabel Sears and Amelia Diebel.⁶ The purpose of the investigation is stated by the writers to be as follows:

“In the belief that conditions at present are such as to entitle it [grammar] to a less important place than it now occupies, an investigation was undertaken to determine the errors of speech made by the Cincinnati school children, how frequently those errors were made, to what extent formal grammar might be made of assistance in overcoming them, and to what extent the formal grammar now studied provides for errors not made by Cincinnati children.”

⁵No attempt has been made to correct numerical errors in this table, which is reproduced as in the original publication.—*Editor*.

⁶*Elementary School Journal*, September, 1916.

TABLE 5

ORAL ERRORS OF 1378 CINCINNATI CHILDREN

Numbers of times each error was made, arranged according to parts of speech, (after Sears and Diebel.)

Verbs	Grades						Total
	3	4	5	6	7	8	
Wrong verb:							
<i>learn for teach</i>	47	17	3	1	..	3	71
<i>can for may</i>	42	..	2	15	3	..	60
<i>got for receive, have, become, grow, is</i>	9	27	4	..	6	7	53
<i>leave for let</i>	2	9	10	12	..	1	34
<i>lay for lie</i>.....	..	11	5	..	3	2	21
<i>make (dinner) for prepare, get</i>	10	10	..	..	..	1	21
<i>set for sit</i>.....	..	4	3	..	..	3	10
<i>lend for borrow</i>.....	..	5	..	..	..	1	6
<i>laid for lay</i>.....	..	1	..	..	..	1	2
Impossible tense form:							
<i>ain't for am not, isn't, aren't</i>	34	17	15	20	14	24	124
<i>ain't for hasn't, haven't</i>	31	19	5	23	1	10	89
<i>drawed, throwed, growed, knowed, etc</i>	14	7	3	..	3	..	27
<i>et for ate</i>	9	2	..	..	..	..	11
<i>boughten, taken</i>	3	3	..	2	..	..	8
<i>sawn for saw</i>	6	..	..	..	..	..	6
<i>busted</i>.....	..	..	1	2	..	2	5
<i>snuck, clumb</i>	1	3	1	..	..	..	5
<i>brung</i>.....	..	3	..	..	..	..	3
<i>durst</i>	3	..	..	..	..	..	3
<i>attackted</i>.....	..	..	..	..	3	..	3
<i>suspicion for suspect</i>.....	..	..	..	1	..	..	1
Perfect participle for past tense and reverse:							
<i>seen, had saw</i>	67	45	18	22	13	15	180
<i>done</i>	21	20	14	15	26	17	113
<i>went</i>	19	4	..	2	3	4	32
<i>broke</i>	16	..	3	..	3	..	22
<i>begun, rung</i>.....	..	1	..	3	1	4	9
<i>took</i>.....	..	..	5	..	..	2	7
<i>wrote</i>.....	..	..	1	1	1	..	3
<i>have came, have became</i>.....	..	..	1	..	1	..	2
Wrong tense—present for past:							
<i>come</i>.....	..	16	5	7	..	3	31
<i>says</i>.....	..	..	6	14	..	..	20
<i>run</i>.....	..	10	..	..	1	..	11
<i>give</i>.....	..	1	..	..	..	..	1
Use of verb for noun:							
<i>That doesn't hurt, for make any difference</i>	8	..	..	..	..	..	8
Wrong sequence:							
<i>I have stayed at home and had done my work</i>.....	..	..	..	..	..	2	2
<i>would run for ran</i>.....	..	..	..	..	..	1	1
<i>doing dishes and help cook</i>.....	..	..	..	..	..	1	1
Incorrect use of mood:							
<i>if it was not for were not</i>.....	..	5	..	..	..	..	5
Failure of verb to agree with subject in number:							
<i>is</i>	30	25	2	9	2	8	76
<i>don't</i>.....	..	6	5	6	19	..	36
Pronouns							
First personal pronoun standing first in series:							
<i>I and my brother</i>	50	42	1	3	..	..	96
Accusative pronoun for subject:							
<i>Frank and me</i>	54	6	4	3	1	2	70
Pronoun for demonstrative adjective:							
<i>them for these</i>	18	9	8	6	13	21	75
Predicate nominative not in nominative case:							
<i>It was me</i>.....	..	1	1	3	14	17	36
Wrong pronoun:							
<i>that, which, for who, whose</i>	12	..	..	..	1	1	14
Object of verb or preposition not in objective case:							
<i>I know who he saw, with George and I</i>.....	..	2	1	3	..	1	7

TABLE 5—Continued

	Grades							Total
	3	4	5	6	7	8		
Failure of pronoun to agree with antecedent in number: <i>Each of them took their guns</i>.....	..	..	..	3	..	1	4
Pronoun for adverb: <i>They are two pens lying, etc.</i>.....	..	..	..	..	1	..	1
Wrong form of pronoun: <i>hissself, his'n</i> .....	..	1	..	1	..	..	2
Adjectives and Adverbs								
Confusion of adjective and adverb: <i>That there</i>	4	..	3	11	19	1	38	
<i>quick, etc. for quickly</i>	1	..	..	1	..	3	5
<i>awful for very</i>.....	..	..	..	1	1	2	4
<i>good for well</i>.....	..	..	..	..	..	1	1
Wrong article: <i>a for an</i>.....	..	2	..	..	..	..	2
Misuse of adjective: <i>funny, lots, etc. for queer, many</i>	8	..	..	3	..	..	11
Double comparison: <i>More stronger, worser for stronger, worse</i>	1	..	..	1	..	..	2
Wrong comparison: <i>gooder</i>	1	..	..	..	..	..	1
Superlative for comparative: <i>largest</i>	3	..	2	2	..	1	8	
Misuse of adverb: <i>awfully for very, dreadfully</i>.....	..	..	..	..	..	3	3
Prepositions								
Confusion of preposition and conjunction: <i>He does it like she does</i>.....	..	..	..	5	10	..	15
Wrong preposition: <i>by my aunt's</i>	10	13	1	3	..	1	28	
<i>by us for near us</i>	16	..	..	..	..	..	16
<i>in back of</i>	3	..	3	4	..	2	12	
<i>would of, had a for would have had to</i>	1	3	..	1	..	2	7	
<i>get some paper off her</i>.....	..	..	..	4	..	..	4
<i>stays to home, diferent to</i>.....	..	..	..	..	..	2	2
<i>find fault of</i>.....	..	1	..	..	..	..	1
<i>upon Monday</i> .....	..	..	..	..	..	1	1
Negatives								
<i>Haven't no for haven't any</i>	91	31	38	12	29	32	233	
<i>Never gave</i>	6	..	7	9	8	..	30	
Ambiguous Expressions								
<i>A hand and an arm with a sword in it</i>.....	..	1	..	..	..	..	1
Syntactical Redundance								
<i>got (in ain't got, haven't got)</i>	36	21	1	26	11	17	112	
<i>my mother, she</i>	13	7	24	4	7	3	58	
<i>all two, all both</i>	19	..	..	..	..	..	19
<i>and, so, at beginning of sentence</i>.....	..	..	..	..	..	..	..
<i>why in middle of sentence</i>.....	..	..	..	..	15	..	15
<i>for to keep, where are you at?</i>.....	..	1	..	3	1	2	7
<i>he says, says he</i>.....	..	..	..	..	3	..	3
<i>those there</i> .....	..	..	..	..	3	..	3
<i>yet (I have seen her twice yet)</i>.....	..	..	..	2	..	..	2
<i>they went and took</i>.....	..	..	1	..	..	..	1

TABLE 5—Continued

Mispronunciation	Grades							Total
	3	4	5	6	7	8		
<i>git, jist, kin, ketch, etc.</i>	67	7	5	10	..	2	91	
<i>somepin for something</i>	25	..	..	..	..	..	25
<i>readin', nothin', etc.</i>	18	..	..	..	..	..	18
<i>onct</i> . . . . .	..	12	..	..	..	..	12
<i>liberry, pitcher for picture</i>.....	..	7	..	1	..	..	8
<i>youse</i> . . . . .	..	7	..	1	..	..	8
<i>scart for scared</i>	5	..	..	1	..	..	6
<i>wen, wich</i>	6	..	..	..	..	..	6
<i>viadock for viaduct</i>	3	..	..	..	..	..	3
<i>hunderd, childern</i>	3	..	..	..	..	..	3
<i>futher for further</i>.....	..	1	..	1	..	..	2
<i>half for have</i>.....	..	..	..	..	..	1	1
<i>perty</i> . . . . .	..	..	..	..	..	1	1

Oral errors of 1378 children were collected by teachers in a few schools for one week in November, 1915. Tables 5 and 6 show the classification of the 2268 errors obtained.

Table 5 should be read as follows: in the errors listed under *Wrong Verb*, the use of *learn* for *teach* was observed 47 times in the 3d grade, 17 times in the 4th grade, etc.

Table 6 presents a summary of the errors by grades.

TABLE 6

PERCENTAGES OF ERRORS IN EACH GRADE DUE TO EACH OF THE EIGHT CLASSES OF MISTAKES LISTED IN TABLE 5

Classification of Errors	Grades							All
	3	4	5	6	7	8		
1. Verbs	44.2	60.0	55.4	54.9	43.3	48.2	49.9	
2. Pronouns	15.9	14.0	6.7	7.7	12.3	18.8	13.5	
3. Negatives	11.5	7.1	20.2	7.3	15.2	14.0	11.6	
4. Snytactical redundancy	8.0	6.6	11.2	12.6	16.5	9.6	9.7	
5. Mispronunciations	14.7	7.8	2.2	4.9	....	1.7	8.0
6. Prepositions	3.4	3.2	1.8	5.6	4.1	2.6	3.5	
7. Adjectives and adverbs	2.0	0.6	2.2	6.6	8.2	4.8	3.3	
8. Ambiguous expressions . . . . .	....	.2	....	....	....	....	.2

Table 6 should be read as follows: Errors in the use of verbs constitute 44.2 per cent of all errors in the 3d grade, 60 per cent of all errors in the 4th grade, etc.

A comparison of relative frequencies in this table with the cities of Northern Illinois and in Boise, as shown in Tables 2 and 3 above, discloses an interesting agreement upon the first place of the verb.

Errors in Use of Other Connectives

Like—as	0	4	1	2	4	6	3	3	23
Per page . . . . .	.00	.09	.06	.04	.01	.036	.009	.01	...
If—whether	0	0	0	1	0	0	2	9	12
Than	0	0	0	1	0	2	0	0	3
But	0	0	2	0	1	0	0	0	3
If, though	0	1	0	0	0	0	0	1	2
Where (in definition)	0	0	0	0	0	2	0	0	2
Total Errors in Use of Other Connectives									45

Errors in Use of Prepositions (Idioms Mainly)

In, into	0	2	2	1	0	1	2	0	8
Superfluous in, on	0	0	0	2	0	0	2	1	5
Of, in	0	0	0	0	2	0	2	0	4
To—at	0	2	0	0	0	0	0	0	2
In—on	0	0	0	0	1	0	0	0	1
Without, except	0	0	0	0	0	0	1	0	1
Total Errors in Use of Prepositions									21

Miscellaneous Errors

Lot	3	0	0	3	11	22	0	0	39
Kind of a }	3	2	0	1	10	4	5	5	30
Sort of a }									
Much of a }	1	0	0	1	4	55	0	1	11
Like phrases									
Kind of (humming)	1	1	0	0	3	1	0	1	6
(whistling)									
(laughing)									
Total Miscellaneous Errors									86

Table 7 should be read as follows: In Grade I 74 pages were examined. In these pages sentence structure was incoherent because of the presence of the loose *and* 83 times, at the rate of 1.12 occurrences per page, etc.

Table 8 summarizes Table 7.⁷

TABLE 8

SUMMARY OF TABLE 7

Summary—	
Total pages of stenographic reports examined	1042
Total errors noticed	2954
Distribution—	
1. Sentence structure	1412
2. Pronouns (including impersonal <i>you</i>)	985
3. Verbs	294
4. Adjective—adverb	111
5. Connectives (other)	45
6. Prepositions	21
7. Miscellaneous	86
Total	2954

⁷The omission of verb-errors from Table 7 is apparently due to an oversight of Mr. Randolph or Mr. Charters. The editor assumes responsibility for attempting at the moment of publication to correct certain numerical inconsistencies in this table.

Table 8 should be read as follows: in a total of 1042 pages, 2954 errors were noticed, of these 1412 were in sentence structure, etc.

It is significant that the only stenographic report should reveal a much higher ratio of error in sentence structure than the reports by teachers.

GRAMMATICAL ERRORS

The foregoing studies investigated the errors of children in both language and grammar. Those to be described in this section aimed to investigate grammatical errors alone. The purposes of these investigations, all of which use the same methods, were first, to determine the rules of grammar broken, and second, upon this as a basis to determine a grammar curriculum. The first part of the investigation will be described in this section, the second in the next.

The first study was made in Kansas City, Missouri, by the writer and Edith Miller.⁸ It was supplemented by a study of 11,000 oral grammatical errors of children in the schools of Detroit collected by S. A. Courtis and classified in the laboratories of the University of Missouri, a study of the oral and written errors of the school children of Bonham, Texas, by Superintendent H. D. Fillers and corps, and a study of the oral errors in the Columbia, Missouri, schools by J. K. Jones.

The procedure was the same in each case. The oral grammatical errors were collected by teachers for a week. All such errors heard in the school rooms and around the school buildings were supposed to be recorded. In addition to this all papers, except dictated exercises, written during one month in the grades of Kansas City were preserved.

This method of determining oral errors, which was used in all the studies except that of Mr. Randolph, is open to certain criticisms. The teachers could not hear all the errors; they might not notice all or have time to record all. Moreover, children might

⁸W. W. Charters and Edith Miller, *A Course of Study in Grammar*, based upon the Grammatical Errors of School Children of Kansas City, Missouri, *University of Missouri, Education Bulletin, Number 9*.

possibly *make* mistakes at home which would not occur at school, but since several hundred teachers participated in the investigation, the probability of the presence of all types of error in the record is high. In fact, studies made in other cities seem to indicate that not only were all types found but also the relative proportion of errors under each type is approximately correct.

TABLE 9

RELATIVE PERCENTAGE OF ORAL AND WRITTEN ERRORS FOUND IN KANSAS CITY, DETROIT, BONHAM, TEXAS, AND COLUMBIA, MISSOURI

	K.C. Writ- ten %	B. Writ- ten %	K.C. Writ- ten % first 21	B. Writ- ten % first 21	K.C. Oral %	D. Oral %	B. Oral %	O. Oral %
1. Subject of verb not in nominative case	0	0	1	0	4	4	5	3
2. Predicative nominative not in nominative case	0	0	1	0	2	1	0	1
3. Object of verb or preposition not in objective case	0	0	1	0	1	1	0	0
4. Wrong form of noun or pronoun	5	7	16	11	2	2	0	1
5. First personal pronoun standing first in a series	0	1	1	1	2	1	2	2
6. Disagreement of noun and pronoun in number, person, and gender	1	1	4	1	0	1	0	0
7. Confusion of demonstrative adjective and personal pronoun	0	—	0	—	3	3	3	4
8. Failure of verb to agree with its subject in number and person	6	4	19	7	14	12	8	9
9. Confusion of past and present tenses	4	12	12	19	2	12	5	6
10. Confusion of past tense and past participle	2	2	5	4	24	14	20	19
11. Wrong tense forms	2	2	5	4	5	3	2	4
12. Wrong verb	2	2	7	4	12	18	21	24
13. Incorrect use of mood	0	0	2	0	0	0	0	0
14. Incorrect comparison of adjectives	0	—	0	—	1	1	0	1
15. Confusion of comparatives and superlatives	0	0	0	0	0	1	0	0
16. Confusion of adjectives and adverbs	2	3	6	6	4	2	1	6
17. Misplaced modifier	2	2	6	4	0	0	..	0
18. Double negative	0	—	1	—	11	9	14	10
19. Confusion of prepositions and conjunctions	0	1	1	1	0	0	..	1
20. Syntactical redundance	4	5	11	7	10	15	9	9
21. Wrong part of speech due to similarity of sound	11	16	—	25	1	1	0	0
22. Failure to put period at end of statement	30	13	..	..	..	..	..	..
23. Failure to put question mark at end of question	2	0	..	..	..	..	..	..
24. Failure to put apostrophe to denote possession	6	0	..	..	..	..	..	..
25. Omission of subject	3	0	..	..	..	..	..	..
26. Omission of predicate	2	8	..	..	..	..	..	..
27. Confusion of dependent and independent clauses	9	8	..	..	..	..	..	..

The method of obtaining the written errors of children is incomplete in so far as errors may occur in personal letters which do not occur in school exercises.

The tabulation of the errors revealed the types shown in Table 9. To this should be added one type at least which was studied in part of the Kansas City written work but not in all; the misuse of capitals with proper and common nouns.

Table 9 shows types of error and the total number of errors observed, together with the percentage of each. The percentage of each type of written errors is given for all and for only the first 21. The latter is shown in order to compare frequencies of error in types common to both oral and written speech.

Item 1, "Subject of verb not in nominative case," reads as follows: Errors due to the subject of the verb not being in the nominative case constituted less than half of 1 per cent of total written errors in Kansas City and Bonham, 1 per cent of the first 21 types of written errors in Kansas City and less than half of 1 per cent of the same in Bonham, 4 per cent of the oral errors in

TABLE 10

CLASSIFICATION OF ORAL ERRORS IN KANSAS CITY SHOWING THE PERCENTAGE OF ERRORS COLLECTED BY TEACHERS OF GRADES 2 TO 7 AND GRADES 6 AND 7* (after Miller & Charters)

	Per Cent in Grades 6 and 7	Per Cent in Grades 2 to 7
1. Subject of verb not in nominative case.....	4	4
2. Predicative nominative not in nominative case.....	2	2
3. Object of verb or preposition not in objective case.....	1	1
4. Wrong form of noun or pronoun.....	3	2
5. First personal pronoun standing first in a series.....	2	2
6. Disagreement of noun and pronoun in number, person, and gender	1	0
7. Confusion of demonstrative adjective and personal pronoun...	3	3
8. Failure of verb to agree with its subject in number and person	13	10
9. Confusion of past and present tenses.	2	2
10. Confusion of past tense and past participle.....	22	24
11. Wrong tense forms.....	8	5
12. Wrong verb	11	12
13. Incorrect use of mood.....	1	0
14. Incorrect comparison of adjectives.....	1	1
15. Confusion of comparatives and superlatives.....	0	0
16. Confusion of adjectives and adverbs.....	4	4
17. Misplaced modifier	0	0
18. Double negative	11	11
19. Confusion of prepositions and conjunctions.....	0	0
20. Syntactical redundancy	8	8
21. Wrong part of speech due to similarity of sound.....	1	1

*Kansas City has no eighth grade.

Kansas City, 3 per cent of the oral errors in Detroit, 5 per cent of the oral errors of Bonham and 3 per cent of the oral errors of Columbia. The dash in the columns of Bonham indicate that no traces of the type were found in their studies. In Kansas City 6,000 oral errors were collected; in Detroit 11,000; in Bonham 500; in Columbia 500. In Kansas City the written errors were collected from 5,000 pages.

It is noteworthy that errors do not seem to vary in relative frequency throughout the grades. Tables 3, 6 and 10 show this.

Table 10 may be read as follows: 4 per cent of the oral errors collected by teachers in Grades 6 and 7 and 4 per cent of oral errors collected by teachers in Grades 2 to 7 were errors made by not having the subject of the verb in the nominative case.

The striking similarities in frequencies of error are shown even in some of the details. The verbs in which confusion in the use of past tense and perfect participle in oral speech in Boise, Detroit, and Kansas City are shown in Table 11.

TABLE 11

WORDS IN WHICH CONFUSION OF PAST TENSE AND PERFECT PARTICIPLE OCCURS IN ORAL SPEECH OF CHILDREN IN BOISE, DETROIT, AND KANSAS CITY, WITH PERCENTAGE OF EACH.

Verbs	Boise	Kansas City	Detroit
<i>see</i>	17	36	46
<i>do</i>	15	18	26
<i>come</i>	10	15	3
<i>go</i>	10	5	6
<i>run</i>	6	..	2
<i>sit</i>	5	..	..
<i>lie</i>	4	..	..
<i>give</i>	4	..	..
<i>begin</i>	4	..	1
<i>ring</i>	3	9	2
<i>write</i>	3	..	3
<i>take</i>	2	..	1
<i>break</i>	2	..	5
<i>sing, drink</i>.....	..	1	1
<i>miscellaneous</i>	15	16	14

Table 11 shows that *see* and *do* rank highest in all the school systems and that about 85 per cent of all the errors of this type in three cities are found in 14 verbs.

An examination of the percentages in Table 10 shows that over half the oral errors are made in verbs, that in verbs the most fre-

quent errors are made in the confusion of past tense and perfect participles of present and past tenses. If syntactical redundancy, double negatives, agreement of subject and predicate, present tense, past tense and perfect participle, and case in pronouns are included in the course of study, 90 per cent of all oral errors are included. It is interesting to note also in the detailed classification that in Kansas City 14 per cent of all oral errors were made through confusion of the past tense with the perfect participle.

In the written errors nearly 40 per cent of the errors are in punctuation and this list does not include the comma. Eleven per cent of errors were made in the confusion of parts of speech because of similarity of sound, as, *to*, *too*, *two*.

It is significant to note the close similarity in the proportions of the gross divisions of type between cities so widely separated as Kansas City and Detroit. Also significant is the fact, that no new types of oral error were reported from any city. In the case of Bonham and Columbia, the collectors had probably read the Kansas City study; in Detroit they had not.

It is the opinion of the writer that the striking differences in the speech of children of foreign-born parents of different nationalities by which one can at once detect the foreign influence are not differences of grammar so much as differences of pronunciation and non-grammatical idioms. If one uses a stenotype and records the exact language of children in the grades but without the pronunciation being indicated, it is impossible to tell from the typewritten reports which is the language of children from Jewish homes, Italian homes, or American homes.

A GRAMMAR CURRICULUM

After the types of error had been determined in the Kansas City study, the next problem attacked was the determination of the facts which must be taught for the purpose of giving information for their correction. Obviously, more than the 29 rules in the tables must be taught, since to understand, for instance, the fact that the subject must agree with its predicate in person and number, one must understand not only the subject and predicate, but

noun, pronoun, singular and plural numbers, verbs, and tenses also. The list must include not only the rules broken but also the other facts of grammar which are necessary in order to understand them.

The Cincinnati study deals informally with this problem and all the studies imply it. The first Kansas City study formulated a course of study based upon the errors found in that city. This is found in Table 12, which is here repeated with slight modifications from the *University of Missouri Bulletin* referred to above.

TABLE 12

A DISCUSSION OF THE ITEMS TO BE INCLUDED IN A COURSE OF STUDY
BASED UPON GRAMMATICAL ERRORS

A. *Nouns*

(a) The definition of the word noun must be learned. It is evident that the children should learn the difference between common and proper nouns, since in a total of 1321 pages, 1039 proper nouns are found beginning with small letters, and 413 common nouns beginning with capitals.

(b) There is a decided need for the study of the inflection of nouns.

1. By far the most important element in the inflection of nouns is number. Here we find 417 violations, or about 3 per cent of the total errors. Worse than this, 776 times the verb fails to agree with its subject in number—six per cent of the total written errors; and 588 times the verb fails to agree with its subject in number—ten per cent of the total oral errors. Thus we find that number in nouns can hardly be stressed too hard.

2. There is not great need for a study of case. The only place in which it is necessary to understand case in nouns is in the matter of the possessive, where 32 instances of failure to add the *s* to form the possessive are found—a small per cent in the total of errors. However, the proper placing of the apostrophe must be emphasized.

3. Gender also must be studied, but it is hardly more necessary than case. There are no errors tabulated in the gender of nouns. There were too few to note separately—only three. However, the need of the study of gender in nouns may be readily seen when the pronoun's failure to agree in gender with its antecedent is noted.

(c) Syntax in nouns seems to be covered by the study of four constructions; *i.e.*, the case of the subject of a verb, the case of the subjective complement, the case of the objective of the verb or preposition, and the case of the indirect object. As far as the matter of error is concerned, these are not important in the study of nouns. They need to be studied only to facilitate the handling of analysis where the noun and pronoun are closely connected in their syntactical functions.

The indirect object construction needs to be taught to help the children to see that a verb may be followed by two words both in the objective case.

B. *Pronouns*

In pronouns the pupil must first know what a pronoun is. Then the different kinds must be studied. The syntactical rules governing the use of pronouns are like those governing the use of nouns.

(a) The personal pronouns, probably because of their high degree of inflection, have caused more difficulty than anything else outside of the field of verbs. Rules of gender are violated very seldom but when such instances do occur, they are unusually bad.

Number, also, is important. To use a plural pronoun referring to a singular antecedent is one of the most common mistakes, outside as well as inside a school room. Over half of the instances in which the pronoun fails to agree with its noun are due to failure to agree in number.

Person may be neglected except as it forms the basis for the other inflections of the personal pronouns.

(b) The compound personal pronouns are often very badly formed. Also the proper use of these pronouns is not observed. They are used far too often for the personal pronoun.

(c) The relative pronoun shows three specific causes for trouble. First, gender. The pupils fail to realize that *which* does not do exactly the work of *who* or *whom*. A definite example of this is a sentence from one of the 6th-grade papers: "There was an old grocer who had a daughter who had a beau which her father did not like who had a man which was clever in tricks."

In the case formations there is a decided lack of understanding that the objective case of the relative *who* ends in *m*. Of course, the number of instances is very small; that is because there was not a large need of it. But almost invariably where they need the objective form they leave off the *m*.

(d) And, lastly, the use of *what*. This word as a relative occurs only a very few times, but it usually has its antecedent expressed.

C. Adjectives

(a) The first thing to be learned about adjectives is the definition and the fact that personal pronouns may never be used as adjectives. This error, so common in the children's language that it totals three per cent of the whole number of errors, strangely enough, rarely occurs in the written work, appearing only three times. The demonstrative adjectives should be taught. The difference between the cardinal and ordinal numbers and the proper terminations for the ordinal must be given. For instance, such expressions as "one of seventeenth children," and "23st Street" occur not infrequently.

(b) The derivation of proper adjectives should be taught, chiefly for the capitalization of these words, (as *English* from *England*, *Greek* from *Greece*, etc.). Very often, indeed, the noun appears in the place of the adjective, and even if the adjective is used the word is very seldom capitalized.

Another error almost of this type is the use of common nouns for common adjectives; *c.g.*, *center* for *central*, *reminiscence* for *reminiscent*, etc.

(c) The comparison of adjectives must be taught. The rules for the addition of *er* and *est*, of *more* and *most* and the irregular forms must be memorized.

(d) The use as well as the formation of the comparative and superlative respectively should be taught.

D. Verbs

One can but be struck by the enormous proportion of errors in verbs. So evidently it is here that teachers need to lay the greatest stress.

(a) First, of course, we must find out what a verb is; then what kinds of verbs there are. Here we have transitive, intransitive, and the copula. Transitive verbs we must understand in order to understand direct object. We need this knowledge again to understand the difference between the verbs *to lay* and *to lie*, *to set* and *to sit*, and *to learn* and *to teach*. Copulative verbs have to be understood in order to comprehend what a predicate noun is.

(b) (1) In the inflection of verbs, person is almost the least important factor. In the oral work, the use of *ain't* for person besides the first singular, made a total of 3 per cent all by itself. (*Ain't* for *am not* in *I am not* was not considered to be an error.) But aside from this case we find only one per cent among the total oral errors and almost none among the written errors. The few errors that there are, are due largely to such an expression as *she don't* (which, of course, might also be called an error in number).

The understanding of number is exceedingly weak. We have 588 failures of the verb to agree in number with its subject as against 243 in person, inclusive of 167 due to the use of *ain't*. We find 753 failures of the verb to agree in number with its subject, as against 10 in person.

This mistake is most common, first, when the subject follows the verb (as in case of the use of the expletive *there*), and, second, when there is a compound subject. In this second case there seems to be an irresistible temptation to make the verb agree with the nearest subject, even if there are three or four other nouns joined to it by *and*'s. A third misleading condition often arises when a singular subject is separated from the verb by a phrase containing a plural noun, or when a plural subject is separated from the verb by a phrase containing a singular noun. (Examples of both are: "The governor of the proprietary colonies were chosen by..." and "The men who lived in the northern part was.....").

(3) The only thing more urgent than number is tense. We see an appalling lack of knowledge here. And, furthermore, this is a far more difficult matter to handle than number.

These are a few verbs which should be hammered on without cessation all through each child's grammar-school education. These are: 1st, the verb *to see*; 2nd, the verb *to do*. 3rd, the verb *to come*.

Go, run, ring, sing, drink, ask, give, write, etc., are very commonly given in the wrong tense. And many verbs appear with impossible tense forms, the commonest, perhaps, being *drawed, seed, attackeded, had ought, clumb, drug, etc.*

Another element that enters into tense is the proper use of the auxiliaries *shall* and *will* (*should* and *would*) in the future tense.

(4) One of the most curious things shown by this study is the comparison of errors, written and oral, in the use of *can* and *may* and *shall* and *will*. *Can* and *may* were interchanged 248 times against 13 times for *shall* and *will* in the oral errors; and *can* and *may* were interchanged 12 times against 125 times for *shall* and *will* in the written work. One reason for this is that permission involving the use of *can* and *may* is usually asked orally and seldom in writing. Another is that in the Middle West we are lax in the use of *shall* and *will* and frequently fail to notice errors. But it seems both a curious and interesting thing, and it shows the necessity of equal emphasis and training in the use of both pairs of auxiliaries. It also shows more clearly than any other fact the way in which the oral work and the written work supplement each other, and illustrates the necessity of further investigation.

(5) Errors in mood are all due to failure to use the subjunctive forms. Mood is quite unimportant for grade children. Besides this fact, the error when made is a slight one. The subjunctive mood is a very technical thing, and to understand it thoroughly a child must have a feel for language seldom possessed by young children. The last, but not the least reason for discarding mood is the fact that the subjunctive is dying a rapid natural death. Practically none of the forms is used now-a-days except the past, and sometimes the present, of the verb *to be*, and these forms which need to be taught might be taught as special cases.

(6) Voice must be taught in order to have the children understand the part of the verb used in these compound forms. For instance, *was wrote well* will appear for *was written well*. This may be based primarily upon tense work taken up earlier in this table—confusion of past tense and past participle. But an understanding of voice will surely be necessary to show that in this we find the past participle always used in conjunction with the forms of the verb *to be*.

(7) The past participle has been dwelt upon above in connection with tense. It must be learned in learning the principal parts of a verb.

(8) The infinitive form needs to be studied only to show that an adverb (or anything else) should not be inserted between the parts of the infinitive (“not able to *quite* see”).

E. Adverbs

(a) Adverbs must be studied only far enough to show that adjectives and adverbs are not interchangeable. In the first place the function of an adverb is different; that is, instead of modifying a noun, it modifies a verb, adjective, or another adverb. Then an adverb tells where or how or when or how much. This must be learned in order to eliminate such expressions as “that *there* lesson.”

(b) The comparison of adverbs must be studied.

F. Prepositions

Two things about prepositions must be studied—first, what they are; and second, their relation to the objective case and the pronouns which they govern.

G. Conjunctions

Work on conjunctions should be like that on prepositions. The principal thing to be guarded against here is the use of *like* as a conjunction. This is a very common error all through the South and West, and it should be brought under control if possible.

Classification of conjunctions should be studied also and a list of the principal coordinate conjunctions learned.

H. Misplaced Modifiers

The oral work shows almost no misplaced modifiers, but the written work shows many. Their absence in the oral illustrations is probably due to the failure to obtain stenographic reports of the oral speech of the children.

I. Double Negatives

Double negatives show a very high percentage in oral work, and an almost negligible percentage in written work.

J. Syntactical Redundance

Ten per cent of the oral errors and four per cent of the written ones are located here. Redundance in prepositions seems to be the most common type, as “where is a thing *at*?” etc.

K. Spelling.

A rather intangible topic—one to be handled rather by the ingenuity of the teacher according to the necessities of the case than by rule—is the matter of spelling. Often when words are misspelled, their whole grammatical sense is changed. For instance *there* is not the possessive case of the plural third personal pronoun, but an adverb of place. This type of error included 11 per cent of the written errors. Naturally it does not appear in the oral work. It is evident that much attention must be given this matter.

L. Sentence Structure.

(a) Lastly, the children must understand what a sentence is and how to write it.

(b) (1). To know how to write the sentence, two items of information are necessary. First, every sentence must begin with a capital letter. If failures to capitalize the first word in a sentence had been counted here they would have been just about equal to the failures to put a period at the end of a sentence—a total of 3,600; for the placing of a period and the use of a capital after it, go together in our minds. Second, every sentence must be followed by some mark of punctuation, an exclamation point, a period, or an interrogation point. The exclamatory type of sentence may be disregarded, as no examples were found. The kind of sentence that asks a question is called interrogative, and is followed by an interrogation point; and all others that the children used are followed by a period. Thirty per cent of the written errors were made because of the failure to put into practice this simple rule. The third type of sentence—the one that asks a question—is followed by an interrogation point. As there are bound to be far fewer sentences of this type, we naturally have a far lower percentage here. But usually when this type of sentence does occur, it is punctuated incorrectly.

M. Parsing and Analysis

Parsing and analysis are necessarily much simplified with this much simplified system of syntax. The sentences given the children to be parsed must contain only the simple constructions covered by this work, representing, as it does, the language of the children themselves.

First, the students must know what parsing is. They must be able to divide a sentence into its main elements, subject, and predicate, and in case of a transitive verb, direct object; sometimes also an indirect object, or if a copulative verb, subjective complement. They must be taught that only a noun in the possessive case, an adjective, adjective phrase, or adjective clause may modify the subject; that only an adverb, adverbial phrase, or adverbial clause may modify the predicate.

(There are so few cases in which trouble in handling noun clauses is felt by the children, and the intrinsic difficulty in handling the matter is so great, that it may be discarded. An example of this type is, "I couldn't tell *who* I saw." It is better to teach it as a special case than to go through all the intricacies of noun clauses.)

This, of course, necessitates the teaching of the adjectival and adverbial types of phrases and clauses, which can be made plain quite easily.

Then, in parsing a noun, its gender, kind, number, case, and syntax *must be stated*; a pronoun, its kind, gender, number, person, case, and syntax; adjective, its kind and what it modifies; also, if numeral, which kind, and if descriptive, which degree; a verb, kind (if transitive, its object must be mentioned; if copulative, its complement must be mentioned), person, number, tense, voice; an adverb, what it modifies (and what degree it is), a preposition, what words it connects; a conjunction, what words, phrases and clauses it connects; phrases and clauses, what kind they are and what they modify.

The extent to which analysis is to be carried is determined by the errors which the children make. No sentences (simple, compound, or complex) should be analyzed which do not involve potential errors, except that simple exercises necessary for the explanation of, and drill upon, the rules are, of course, necessary. Even these, however, should, as far as possible be such as contain potential errors. Sentences involving subtleties of grammar would by these principles be avoided unless they involve actual or potential errors.

Negatively, from this curriculum are omitted many of the facts, and these the most difficult, found in most grammars. A few of these may be mentioned. They are participial phrases, infinitive constructions, voice, moods (except possibly the subjunctive of *to be*), and gerunds. In addition, many minor facts are omitted from the treatment of large topics which are retained.

COMMENTS

1. The strength of these studies lies in their method of attack. They seek to obtain first-hand information about the errors of children.

2. The technical difficulties encountered are many. It is difficult to draw a line between grammatical and non-grammatical errors; errors may not be noted by teachers or stenographers; school errors may not coincide with out-of-school errors; all classifications in language or grammar are subject to controversy. These are a few difficulties. Yet these studies point clearly to the possibility of obtaining a classification of errors and an evaluation of frequency which for practical purposes will prove both adequate and valuable.

3. The similarity of frequencies in errors in cities widely distributed geographically indicates that a large proportion of the errors of school children are national rather than sectional errors.

4. Studies of oral errors sufficiently accurate for practical purposes can be made so easily and with so little labor by any corps of teachers that any school may determine what its detailed errors are and thereby give to its corps the enthusiasm that comes from the attack upon practical and immediate problems.

CHAPTER VII

A PRELIMINARY REPORT OF AN INVESTIGATION OF THE ECONOMY OF TIME IN ARITHMETIC

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After we have a detailed statement of the outcomes which are desired from the teaching of arithmetic according to the accepted aim or aims, it is then possible to determine the arithmetical materials (examples, drill devices, problems, rules, principles, etc.) and the most effective methods which are needed to produce the desired outcomes. Economy of time in arithmetic will be effected by (1) determining a minimal list of desired outcomes and (2) determining the minimum of educative materials by means of which this minimum of outcomes may be produced when the most effective methods of instruction are employed.

The investigation described in this report is based upon the assumption that the primary purpose of teaching arithmetic in the elementary school is to equip the pupil (1) with the knowledge of facts, principles, and relationships existing between quantities, etc., which is needed to decide what arithmetical operations are to be performed in solving valuable practical problems and (2) with the skills which are necessary to perform these operations. A practical problem is defined as a problem which occurs in the course of a human activity. Human activity is not restricted to vocations or occupations, but, as the following pages show, four major divisions of human activities have been recognized—(1) occupational activities, (2) activities of the home, (3) personal activities, and (4) activities of school children. This definition of a “practical problem” has no reference to the economic or social importance of the problem. It simply means that in order to be classed as “practical” a problem must be one that occurs in some human activity.

One major purpose actuated this study, namely, to secure a list of the arithmetical problems which arise in human activities and which possess a sufficient degree of utilitarian or socializing value to justify their being designated as minimal essentials of purpose. At this time it is possible to give only the method of investigation and certain tentative observations on the data which have been collected.

In determining this list of problems the plan has been, first, to secure as complete a list as possible, and, second, to determine which problems possess sufficient value to be designated as minimal essentials of purpose. In accomplishing the first purpose problems have been collected from textbooks and other available sources. Since the final list is to consist only of problems which arise in human activities, problems which did not contain some clue to identify them with a human activity have been rejected. For example, the following problems probably do not occur in any human activity.

880 times the area of Porto Rico is 2,800 sq. mi. less than that of the United States. Find the area of Porto Rico.

If the area of the Philippine Islands were increased by 2,000 sq. mi., 25 times this area would be 99,950 sq. mi. less than the area of the United States. What is the area of the Philippines?

The area of Germany diminished by 8,830 sq. mi. is $\frac{1}{15}$ of the area of the United States when diminished by 25,600 sq. mi. What is the area of Germany?

One year Montana produced 30,820,000 pounds of wool. If this was $\frac{2}{17}$ of the total production of the United States that year, how much did all other states produce?

Problems such as the following do occur in several human activities but the statements of the problems contain nothing to identify them with any particular activity. For this reason such problems have been rejected:

The sides of a triangular field are respectively 236.7 ft., 257.9 ft., and 248.4 ft. What is the perimeter?

The base of a rectangle is 4.75 in. and the height is 3.5 in. Find the area.

Allowing $31\frac{1}{2}$ gal. to the barrel, how many gallons will it take to fill a tank containing $16\frac{1}{2}$ bbl.?

After much consideration, the following plan was decided upon for classifying the problems which were collected:

I. Occupational activities.

A. Agriculture, forestry, and animal husbandry

1. Dairy farmers
2. Farmers
3. Gardeners and landscape gardeners
4. Stock raisers
5. Other agricultural and animal husbandry pursuits

B. Extraction of minerals

1. Operators, officials, and managers

C. Manufacturing and mechanical industries

1. Bakers
2. Blacksmiths
3. Brick and stone masons
4. Builders and building contractors
5. Cabinet-makers
6. Carpenters
7. Electricians and electrical engineers
8. Engineers (mechanical)
9. Managers and superintendents (manufacturing)
10. Manufacturers and officials
11. Millers (grain, flour, feed, etc.)
12. Milliners and millinery dealers
13. Molders, founders, and casters (metal)
14. Painters, glaziers, varnishers, enamelers, etc.
15. Paper hangers
16. Plasterers
17. Plumbers and gas and steam fitters
18. Semi-skilled operatives
19. Tailors and tailoresses
20. Tinsmiths and coppersmiths
21. Upholsterers

D. Transportation

1. Water transportation (selected occupations)
2. Road and street transportation (selected occupations)
3. Proprietors and managers of transfer companies
4. Baggage men and freight agents
5. Conductors (steam railroad)
6. Locomotive engineers and firemen and motormen
7. Officials and superintendents
8. Ticket and station agents
9. Agents (express companies)

- 10. Telegraph and telephone messengers, operators, and linemen
- 11. Road and street building and repairing foremen and overseers
- 12. Proprietors, officials, and managers

E. Trade

- 1. Bankers, brokers, and money lenders
- 2. Clerks in stores (including salesmen and saleswomen)
- 3. Commercial travelers
- 4. Insurance agents and officials
- 5. Newsboys
- 6. Proprietors, etc., elevators
- 7. Real estate agents and officials
- 8. Retail dealers
- 9. Auctioneers, demonstrators, and sales agents
- 10. Wholesale dealers, importers, and exporters

F. Public service (not elsewhere classified)

- 1. Officials and inspectors (city and county)
- 2. Officials and inspectors (state and United States)

G. Professional service

- 1. Architects
- 2. Lawyers, judges, and justices
- 3. Showmen
- 4. Teachers (school)

H. Domestic and personal service

- 1. Bootblacks
- 2. Hotel keepers and managers
- 3. Laundry owners, officials, and managers

I. Clerical occupations

- 1. Collectors

II. Activities of the home.

III. Personal activities.

IV. Activities of school children.

The problems under each of these heads have been further classified according to type. For example, the following types of problems appear under the head of "clerks, including salesmen and saleswomen:"

	<i>Type problems</i>	<i>Frequency</i>
A family buys a quart of milk a day at 8c a quart. How much is their milk bill for a month of 30 days?.....		434
How much will be left of \$1 after paying for 8 pounds of sugar at 6½ cents per pound?.....		58
John's mother orders 30 pounds of butter at 34c a pound; 4 dozen eggs at 40c a dozen; and a dollar's worth of sugar. Find the amount of her bill.		107

At a "closing out" sale, I purchased, at a discount of 25%, a suit marked \$35, a coat marked \$18.50, a hat marked \$3.25, and a pair of gloves marked \$1.50. Find the total amount of my bill..... 62

At 25c a yard, how many yards of cloth can be bought for \$37.25?..... 119

I paid \$280 for a piano at 30% discount. What was the original price of the piano?..... 5

A clerk cuts from a bolt containing 42 yd. of cloth, $8\frac{1}{2}$ yd., $6\frac{3}{4}$ yd., and 12 yd. Find the amount left in the piece..... 21

What is the difference in cost of 144 books at \$1.16 $\frac{2}{3}$ a volume, and the same number at \$1.12 $\frac{1}{2}$ a volume?..... 3

If 4 collars cost 90c, what will 6 cost?..... 37

A board 1 in. thick is 1 ft. wide and 10 ft. long. How many board feet does it contain?..... 23

A clerk sold $2\frac{1}{2}$ lb. of paper to one customer, 3 lb. 12 oz. to another, and 4 lb. 4 oz. to another. How many pounds did he sell in all?..... 6

A salesman receives \$100 per month and a commission of $1\frac{1}{8}\%$ on his sales. What does he receive for the year in which his sales amount to \$108,000? 6

The purchases charged on a monthly statement are: $12\frac{3}{4}$ yd. silk at \$1.25; $6\frac{1}{2}$ yd. lining at $12\frac{1}{2}$ c; $\frac{1}{2}$ doz. spools of thread at 60c a dozen; 1 bolt of taffeta ribbon at \$3.50; $9\frac{7}{8}$ yd. velvet ribbon at 33c; $1\frac{1}{2}$ doz. buttons at 17c a dozen. The credit charge is 5 yd. ribbon at 35c a yard. Find the balance due..... 9

How many running feet of boards will contain 1200 sq. ft., when the boards are 6 in. wide?..... 4

A salesman receives a monthly salary of \$60 and, in addition, a commission of 5% on his sales. His sales must amount to what sum annually to give him an income of \$1200?..... 3

What part of a dollar is paid for a piece of linen when 75c is paid?.... 2

First estimate, and then find, how many barrels of flour at \$6.50 a barrel should be given in exchange for 13 barrels of apples at \$2.00 a barrel 8

A merchant pays \$38.40 for a piece of cloth. If there had been 3 yards more in the piece, it would have cost him \$42. How many yards were there in the piece?..... 1

A second reader cost 10c more than a first, and a third reader 10c more than a second. If the three books cost \$1.05, what was the cost of each book? 1

A man computing the cost of 43 articles multiplied, by mistake, the cost of each by 34 instead of 43 and obtained \$84.32. What was the correct cost of the lot?..... 1

A man offered a sovereign (1 pound) in payment of a book and received 12s. 6d. in change. What did the book cost?..... 1

I buy $1\frac{1}{2}$ gross of brass fasteners. How many do I buy..... 1

It is to be noted that the basis of the first classification is essentially sociological, while the basis of the second is mathematical. Thus, the final list of type problems will be a statement of the arithmetical difficulties (problems) which are met in each activity.

Problems growing out of business transactions involve two parties. Such problems were assigned to the person who is primarily responsible for solving them. Thus, the following problems were assigned to "clerks, including salesmen and saleswomen" instead of to the person doing the buying. The salesman must solve them. If the buyer solves them, it is only to check the salesman's calculations.

When candy is selling for 40 cents per pound, how many ounces will I receive for 25 cents?

I buy six collars at 15 cents apiece, two shirts at \$1.50 apiece, and a tie for 75 cents. How much change should I receive from a five-dollar bill?

The grouping of occupational activities is that used in the Federal Census. This plan was adopted so that the frequency of the occurrence of problems could be compared with the frequency with which the several occupations occur in our working population. A number of occupations do not appear for the reason that no problems have been found to assign to them. In Table 1 a complete list of the major occupational divisions is given. Those for which problems have been found are indicated by the frequency of the occurrence of the problems.

Under the head of "activities of the home" such problems as the following have been listed:

If a pound of porterhouse steak costing 24 cents contains only 10 ounces of lean meat, what is the cost per pound of the latter?

A patent burner reduces the expense of lighting $\frac{1}{4}$ c an hour. How much is saved in a year on 3 such burners if the average time of burning them is $2\frac{1}{2}$ hours an evening?

If a quart of milk, which contains as much nutriment as 10 oz. of steak, worth 32c a pound, should be sold according to the same food value as steak, what price would be charged for it?

A certain room is 5 yd. long and 4 yd. wide. How many strips of carpet 1 yd. wide, and running the long way, will be required to cover the room? How many yards of carpet will there be?

If a woman uses $2\frac{3}{4}$ lb. of liquid and $8\frac{1}{4}$ lb. of flour in making bread, the weight of the liquid is what part of the weight of the flour? of the weight of the mixture?

If a recipe will provide enough for 5 persons, and you wish to provide for 8 persons, what part must you add to the recipe? Instead of 10 teaspoons you would need how many?

To make thin starch we need $\frac{3}{4}$ of a cup of starch to $4\frac{3}{4}$ cups of water. If we use $1\frac{1}{2}$ gal. of water, how much starch should we use?

Allowing 2150.4 cu. in. to a bushel, how many tons of coal can be placed in a bin containing 560 cu. ft., if the weight of 1 bu. of coal is 80 lb.?

Elizabeth finds that a table cover requires 2 yd. 27 in. of goods. Express in yards the length required.

How many lengths $\frac{3}{4}$ yd. long can be cut from 15 yd. of goods?

Kitchen towels are to be made. Each requires $\frac{7}{8}$ of a yard of crash. How many yards must be bought for 9 towels?

How many tons of coal will be consumed in 100 days if 100 lb. are used in $7\frac{1}{2}$ hours?

A roll of matting containing $22\frac{3}{4}$ yd. is cut into 3 equal lengths. How many yards are there in each piece?

A family pays for groceries in Sept., \$24.70; in Oct., \$21.50; in Nov., \$25.40. Find the average amount paid per month.

A housekeeper receives \$60 a month, out of which she pays the housekeeping expenses for her family. For groceries, she spends one month, \$28.75; for meats, \$9.20; for laundry, \$4.80; for fuel, lighting, and incidentals, \$10.98. What was the balance left from the \$60.00 at the end of the month?

What is the amount spent for clothing during the year by the family spending 16% of an annual income of \$1400?

A quart of paint will cover about 9 sq. yd. of a floor in painting the first coat and about 12 sq. yd. in painting the second coat. At 30c a quart, what is the approximate cost for 2 coats of paint for a kitchen floor 12 ft. by 9 ft.?

A man set out geraniums 8 in. apart along a bed 5 yd. 2 ft. 4 in. long. If the end plants stand 4 in. from the edges of the bed, how many plants were required?

The divisions under "personal activities" in most cases indicate the types of problems which have been assigned to them. The division "reading, interpretation" needs explanation. Adults read daily papers, magazines, books, etc. and in doing so frequently meet statements of quantities. These statements must be interpreted if they are to be understood and this frequently involves arithmetical calculations. Such situations may be illustrated by the following problems:

A warship was purchased for \$7,500,000. This sum of money would build how many miles of good roads if the cost of each mile was \$1200?

1,000,000 bales of cotton often change owners on the New York Exchange in one day during the winter season. What is the value of such a sale at 12 cts. a pound, allowing 500 lb. to the bale?

The President of the United States receives \$75,000 a year. How much does he receive a month?

It is estimated that, during a recent year before the war, all the countries of Europe and their colonies spent £498,000,000 on their armies, navies, and fortifications. If a pound sterling is equivalent to \$4.87, how many dollars a day does this sum represent?

About 20 million dollars' worth of beef is exported annually; of this the British Isles take .99. What is the value of the beef exported to all the rest of the world?

During one of the record flights for height, an aviator went up 20,184 feet. This was how many feet over 3 miles?

A boy starting to work in this mill at 14 years of age receives \$4 a week. If he develops unusual skill, he may, at the age of 25, earn \$20 a week as a "mule spinner." Should he be so successful as this, what would have been his average increase in income for the 12 years?

During an epidemic of typhoid in one of our great cities there were 5421 cases and 622 deaths, all of which might have been prevented by the expenditure of \$2,500,000 in improving the water supply. It was computed that the loss of wages from sickness cost the people \$26,900; the loss of life was estimated at \$677,000. The loss was how much greater than the cost of the improvements would have been?

In school children engage in many activities. These include the performing of experiments in the laboratories, the care of a school garden, the work of the domestic science and art departments, construction in the manual training shop, school excursions, etc. The problems which children meet in the course of such activities have been classed under the head of "activities of school children."

The plan of this study involves the assumption that the problems possessing sufficient value to be included in the list of "minimal essentials of purpose" are to be found in our present arithmetic texts and in other accessible printed problem lists. The validity of this assumption cannot be tested until the examination of texts and other printed lists of problems is completed, but the study has been carried far enough to show that the list which is obtained will be far more complete than is now found in any one.

textbook. It should also be noted that since our purpose is to obtain a list of minimal essentials of purpose, all problems which do not possess a sufficient degree of value, will be excluded from this final list. Since this is the case, the fact that unimportant problems are found in the textbooks will not influence the final list.

The writer recognizes that the ideal procedure would be to make a complete survey of activities to ascertain what arithmetical problems exist and the frequency of their occurrence. However, the plan now being followed was chosen because it was felt to be far more feasible. It is not believed that the assumption which it involves will place serious limitations upon the results, but after the sources of problems now being used have been exhausted, the writer proposes to test the validity of the assumption and its influence upon the final list.

TABLE 1

DISTRIBUTION OF WORKING POPULATION, TEN YEARS OF AGE AND OVER, ACCORDING TO OCCUPATION, COMPARED WITH THE DISTRIBUTION OF OCCUPATIONAL PROBLEMS

I. OCCUPATIONAL ACTIVITIES	Number of Workers per 10,000 Population.	Number of Types of Problems.	Total Number of Problems, All types.
A. Agriculture, forestry, and animal husbandry			
1. Dairy farmers	16.2	37	61
Dairy farm laborers.....	9.1	...	...
2. Farmers	1537.0	67	605
Farm laborers (home, working out, and			
turpentine farm)	1565.8	...	...
Farm, dairy, garden, orchard, etc., foremen	12.5	...	...
Fishermen and oystermen.....	17.9	...	...
Foresters	1.1	...	...
Florists, fruit growers, and nurserymen...	14.6	...	...
3. Gardeners and landscape gardeners.....	21.9	5	7
Garden, greenhouse, orchard, and nursery			
laborers	35.1	...	...
Lumbermen, raftsmen, and woodchoppers..	42.3	...	...
Owners and managers of log and timber			
camps	2.1	...	...
Stock herders, drovers, and feeders.....	16.5	...	...
4. Stock raisers	13.7	1	1
5. Other agriculture and animal husbandry			
pursuits	11.6	1	1
Total for occupations furnishing problems....	1600.4	...	...
Total for occupations furnishing no problems..	1717.0	...	...
Total	3317.4	111	675
B. Extraction of minerals			
1. Operators, officials, and managers.....	6.6	2	4
Total for occupations furnishing problems....	6.6	...	...
Total for occupations furnishing no problems..	246.2	...	...
Total	252.8	2	4

I OCCUPATIONAL ACTIVITIES	Number of Workers per 10,000 Population.	Number of Types of Problems.	Total Number Problems, All types.
O. Manufacturing and mechanical industries			
Apprentices	31.2	...	...
1. Bakers	23.5	2	2
2. Blacksmiths	61.0	1	1
Forgemen, hammermen, and welders	2.0	...	...
Boilermakers	11.7	...	...
3. Brick and stone masons	44.4	5	7
4. Builders and building contractors	45.7	31	274
Butchers and dressers (slaughterhouse)	4.2	...	...
5. Cabinet-makers	10.9	2	6
6. Carpenters	214.1	13	33
Compositors, linotypers, and typesetters	33.4	...	...
Coopers	6.6	...	...
Dressmakers and seamstresses (not in factory)	117.7	...	...
Dyers	3.7	...	...
7. Electricians and electrical engineers	35.5	1	1
Electrotypers, stereotypers, and lithographers	3.2	...	...
8. Engineers (mechanical)	3.8	2	13
Engineers (stationary)	60.8	...	...
Engravers	3.6	...	...
Filers, grinders, buffers, and polishers (metal)	13.0	...	...
Firemen (except locomotive and fire de- ment)	29.1	...	...
Foremen and overseers (manufacturing)	45.8	...	...
Furnacemen, smeltermen, heaters, pourers, etc.	9.5	...	...
Glass blowers	4.0	...	...
Jewelers, watchmakers, goldsmiths, and silversmiths	8.5	...	...
Laborers (n. o. s.)	652.4	...	...
Loom fixers	3.4	...	...
Machinists, millwrights, and tool makers	127.9	...	...
9. Managers and superintendents (manufac- turing)	27.3	29	57
10. Manufacturers and officials	67.2	44	111
Mechanics (n. o. s.)	9.1	...	...
11. Millers (grain, flour, feed, etc.)	6.0	9	20
12. Milliners and millinery dealers	33.5	4	7
13. Moulders, founders, and casters (metal)	31.6	9	14
Oilers of machinery	3.6	...	...
14. Painters, glaziers, varnishers, enamelers, etc.	88.4	5	12
15. Paper hangers	6.7	2	9
Pattern and model makers	6.1	...	...
16. Plasterers	12.4	5	19
17. Plumbers and gas and steam fitters	38.8	2	3
Pressmen (printing)	5.2	...	...
Rollers and roll hands (metal)	4.8	...	...
Roofers and slaters	3.7	...	...
Sawyers	11.3	...	...
18. Semi-skilled operatives (n. o. s.)	642.4	5	10
Sewers and sewing machine operators (factory)	76.3	...	...
Shoemakers and cobblers (not in factory)	18.2	...	...
Skilled occupations (n. o. s.)	4.4	...	...
Stone cutters	9.3	...	...
Structural iron workers (building)	2.9	...	...
19. Tailors and tailoresses	53.6	6	11
20. Tinsmiths and coppersmiths	15.6	4	8
21. Upholsterers	5.2	1	1
Total for occupations furnishing problems	1467.6	...	...
Total for occupations furnishing no problems	1327.6	...	...
Total	2794.2	182	619

I. OCCUPATIONAL ACTIVITIES	Number of Workers per 10,000 Population.	Number of Types of Problems.	Total Number of Problems, All types.
D. Transportation			
1. Water transportation (selected occupations)	36.4	13	25
2. Road and street transportation (selected occupations)	157.0	1	1
3. Proprietors and managers of transfer companies	4.1	1	7
4. Baggage men and freight agents.	4.5	8	20
Boiler washers, engine hostlers, and brakemen	27.0	...	...
5. Conductors (steam railroad)	17.2	1	1
Conductors (street railroad)	14.9	...	...
Foremen and overseers	18.3	...	...
Laborers	149.5	...	...
6. Locomotive engineers and firemen and motormen	60.7	2	3
7. Officials and superintendents.	5.8	48	170
Switchmen, flagmen, and yardmen	22.3	...	...
8. Ticket and station agents	6.3	4	12
9. Agents (express companies)	1.5	2	11
Express messengers and railway mail clerks	5.8	...	...
Mail carriers	21.2	...	...
10. Telegraph and telephone messengers, operators, and linemen	53.7	1	3
11. Road and street building and repairing foremen and overseers	1.8	2	2
Foremen and overseers telegraph and telephone companies water and other transportation	2.0	...	...
Inspectors	8.7	...	...
Laborers (n. o. s.)	58.0	...	...
12. Proprietors, officials, and managers (n.o.s.)	3.8	19	62
Other occupations (semi-skilled)	10.2	...	...
Total for occupations furnishing problems	352.8	...	...
Total for occupations furnishing no problems	337.9	...	...
Total	690.7	102	317
E. Trade			
1. Bankers, brokers, and money lenders	27.7	38	805
2. Clerks in stores (including salesmen and saleswomen)	331.2	23	907
3. Commercial travelers	43.3	2	8
Decorators, drapers, and window dressers	1.4	...	...
Deliverymen	60.1	...	...
Floorwalkers, foremen, and overseers	5.4	...	...
Inspectors, gaugers, and samplers	3.5	...	...
4. Insurance agents and officials	25.5	20	160
Laborers in coal and lumber yards, warehouses, etc.	21.2	...	...
Laborers, porters, and helpers in stores	26.7	...	...
5. Newsboys	7.7	4	6
Employment office keepers, proprietors, etc., warehouses, other proprietors, officials, and managers	4.2	...	...
6. Proprietors, etc., elevators	1.3	4	6
7. Real estate agents and officials	33.0	21	74
8. Retail dealers	313.0	78	485
9. Auctioneers, demonstrators, and sales agents	11.5	4	12
Undertakers	5.4	...	...
10. Wholesale dealers, importers, and exporters	13.2	15	118
Other pursuits (semi-skilled)	10.9	...	...
Total for occupations furnishing problems	807.4	...	...
Total for occupations furnishing no problems	138.8	...	...
Total	946.2	225	2621

I. OCCUPATIONAL ACTIVITIES	Number of Workers per 10,000 Population.	Number of Types of Problems.	Total Number of Problems, All types.
F. Public service (not elsewhere classified)			
Firemen (fire department)	9.3	...	...
Guards, watchmen, and doorkeepers	20.4	...	...
Laborers (public service)	17.6	...	...
Marshals, sheriffs, detectives, etc.	6.2	...	...
1. Officials and inspectors (city and county)	13.5	49	152
2. Officials and inspectors (state and United States)	13.7	15	52
Policemen	16.2	...	...
Soldiers, sailors, and marines	20.2	...	...
Other pursuits	2.7	...	...
Total for occupations furnishing problems	27.2	...	...
Total for occupations furnishing no problems	92.6	...	...
	119.8	64	204
G. Professional service			
Actors	7.4	...	...
1. Architects	4.4	2	2
Artists, sculptors, and teachers of art	9.1	...	...
Authors, editors, and reporters	10.2	...	...
Chemists, assayers, and metallurgists	4.3	...	...
Civil engineers and surveyors	13.6	...	...
Mining engineers	1.8	...	...
Clergymen	30.8	...	...
College presidents and professors	4.1	...	...
Dentists	10.5	...	...
Designers, draftsmen, and inventors	12.4	...	...
2. Lawyers, judges, and justices	30.1	3	4
Musicians and teachers of music	36.5	...	...
Photographers	8.3	...	...
Physicians and surgeons	39.5	...	...
3. Showmen	5.3	1	1
Teachers (athletics, dancing, etc.)	1.1	...	...
4. Teachers (school)	155.8	16	70
Trained nurses	21.6	...	...
Veterinary surgeons	3.1	...	...
Other professional pursuits	4.1	...	...
Semi-professional pursuits	17.0	...	...
Attendants and helpers (professional service)	4.6	...	...
Total for occupations furnishing problems	195.6	...	...
Total for occupations furnishing no problems	240.0	...	...
Total	435.6	22	77
H. Domestic and personal service			
Barbers, hairdressers, and manicurists	51.2	...	...
Bartenders	26.5	...	...
Billiard room, dance hall, skating rink, etc., keepers	4.1	...	...
Boarding and lodging house keepers	43.4	...	...
1. Bootblacks	3.6	1	1
Charwomen and cleaners	8.9	...	...
Elevator tenders	6.6	...	...
2. Hotel keepers and managers	16.9	4	4
Housekeepers and stewards	49.6	...	...
Janitors and sextons	29.7	...	...
Laborers (domestic and professional service)	14.0	...	...
Launderers and launderesses (not in laundry)	139.7	...	...
Laundry operatives	...	...	...
3. Laundry owners, officials, and managers	4.8	3	4
Midwives and nurses (not trained)	34.9	...	...
Porters (except in stores)	22.1	...	...
Restaurant, cafe, and lunch-room keepers	16.0	...	...
Saloon keepers	17.9	...	...
Servants	412.0	...	...

I. OCCUPATIONAL ACTIVITIES	Number of Workers per 10,000 Population.	Number of Types of Problems.	Total Number of Problems, Alltypes.
Waiters	49.3	...	...
Bathhouse keepers and attendants, cemetery keepers, umbrella menders and scissors grinders, other occupations	3.9	...	...
Cleaners and renovators (clothing, etc.) . . .	3.9	...	...
Total for occupations furnishing problems . . .	25.3	...	...
Total for occupations furnishing no problems . .	963.0	...	...
I. Clerical occupations	988.3	8	9
Agents and canvassers	18.2	...	...
1. Collectors	9.4	4	3
Bookkeepers, cashiers, and accountants . . .	127.4	...	...
Clerks (except clerks in stores)	188.7	...	...
Messenger, bundle, and office boys	28.3	...	...
Stenographers and typewriters	83.4	...	...
Total for occupations furnishing problems . . .	9.4	...	...
Total for occupations furnishing no problems . .	445.6	...	...
Total	455.0	4	5
GRAND TOTAL	10,000.0	720	4885
II. ACTIVITIES OF THE HOME		64	359
Total . . . . .	.....	64	359
III. PERSONAL ACTIVITIES			
A. Employing help for personal or miscellaneous use . . . . .	.....	5	25
B. Choosing the more profitable plan of action . . . . .	.....	19	76
C. Personal accounts including investments . . . . .	.....	69	456
D. Doing work . . . . .	.....	10	16
E. Traveling . . . . .	.....	30	150
F. Partition of property or expense . . . . .	.....	7	27
G. Experimentation and measurement . . . . .	.....	7	20
H. Reading, interpretation . . . . .	.....	26	83
I. Inventory . . . . .	.....	13	75
J. Estimating materials and cost . . . . .	.....	16	43
K. Games . . . . .	.....	6	46
Total . . . . .	.....	208	1017
IV. ACTIVITIES OF SCHOOL CHILDREN		31	92
Total . . . . .	.....	31	92
GRAND TOTAL . . . . .	.....	1023	5995

Table 1 presents certain striking facts. In the first place, out of a total of 1023 types of practical problems found in four textbooks, 720, or 71 per cent., occur in occupational activities. Problems of the occupational type are distributed under the seven major heads as follows:

	Per cent. of Total Number of Type Problems
A. Agriculture, forestry, and animal husbandry	10.8
B. Extraction of minerals	0.2
C. Manufacturing and mechanical industries	18.1
D. Transportation	9.9
E. Trade	21.9
F. Public service (not elsewhere classified)	6.2
G. Professional service	2.1
H. Domestic and personal service	0.8
I. Clerical occupations	0.4

That the largest per cent. of type problems come from "trade" is not surprising when we remember that arithmetic developed primarily as a necessity of commerce. It is, however, gratifying that so large a per cent. of the type problems come from other sources, particularly "personal activities" and "agriculture, forestry, and animal husbandry." Only 9.5 per cent. of the working population are engaged in "trade," while 33.2 per cent., are engaged in "agriculture, forestry, and animal husbandry" and all adults, regardless of occupation, participate in "personal activities."

An examination of Table 1 will disclose that no problems have been found to assign to a large number of the specified occupations. These occupations make up 55 per cent. of the total working population. If further research does not reveal a considerable number of occupational problems which come under these heads, a limitation of arithmetic as a vocational subject will be obvious.

In collecting the problems there has been no attempt to determine the degree of the probable occurrence of the problem. The only question asked has been whether the problem was identified with some activity. Thus, the list now probably contains a number of problems which do not occur, or occur only very seldom. For example, it is difficult to conceive of the following problem occurring, although it is explicitly identified with an activity of the home.

Find the cost of the carpet needed for a room 11 ft. 3 in. wide, 10 ft. high, containing 2278 cu. ft. 216 cu. in., the carpet being 27 in. wide and costing \$1.35 a yard, allowing 9 in. for matching each strip except the first.

Other problems probably occur but seldom and do not appear to have a high degree of value. The following illustrate this type:

If 154 bu. of wheat are required to make 44 bbl. of flour, how many bushels will be required to make 26 bbl.?

A man laid 125 shingles in $\frac{5}{16}$ of an hour. What part of a minute did it take per shingle?

The fact that such problems have been counted in both Table 1 and Table 2 must be taken into consideration when studying either table. It may be that when problems like these have been eliminated in making a list, the frequencies will be materially different.

TABLE 2
 FREQUENCY OF OCCURRENCE OF TYPE PROBLEMS IN FOUR TEXTBOOKS

Number of Type Problems	Frequency	Number of Type Problems	Frequency	Number of Type Problems	Frequency
1	434	1	38	3	18
1	256	2	37	8	17
1	131	4	35	7	16
1	119	1	34	2	15
1	107	2	33	5	14
1	98	1	32	7	13
1	88	3	31	5	12
1	78	2	30	11	11
1	68	3	29	17	10
1	62	1	28	6	9
1	61	2	27	12	8
1	60	2	26	15	7
1	58	2	25	39	6
1	57	7	23	37	5
1	56	3	22	46	4
2	51	2	21	98	3
2	46	2	20	140	2
1	44	1	19	511	1
1	42				

A study of the frequency with which type problems occur reveals a significant fact; viz., the frequency ranges from one to 434. In Table 2 the frequencies given under the several heads have been collected. Beginning at the end, the table is to be read, 511 type problems occur only once, 140 type problems occur twice, 98 type problems occur three times and so on until we reach the one type problem that occurs 434 times. The total number of type problems is 1023. The median frequency of occurrence is 1.00.

This wide variation in frequency shows that the authors of our textbooks are far from being in agreement on the type problems of arithmetic. Only one author out of four has recognized 511 out of 1023 type problems and 140 type problems have received the recognition of only two authors out of four. These are minimal statements because no distinction has been made between a type problem being repeated in the same text and one occurring in another text. On the other hand, there is one type of problem (What is the cost of 5 yards of cloth at 16 cents per yard?) that occurs 434 times, or an average of 108 in each text. When the primary texts of the series are included, this frequency will doubtless be increased.

If we take the judgment of the authors of textbooks as a basis for determining the importance of the problems of arithmetic, we arrive at the conclusion that there are not more than 372 type prob-

lems which are judged important enough to be included in a text by three out of four authors. Our data have not been tabulated in a way to show what number of type problems the acceptance of this conclusion would eliminate from each of the texts used in this study. However, there are only 274 type problems which can be common to all four texts. If we assume that the type problems which occur three times, twice, and only once are uniformly distributed, the average number of type problems per text is $274 \div 73 \div 70 \div 128 = 545$. Of this number $128 \div 70 = 198$ have not received the approval of the majority of the authors. If these were eliminated from the texts, it would mean reducing the number of type problems 55 per cent., or by more than half of the total number.

It must be remembered that the foregoing statements are made upon the basis of only four texts, which is an entirely inadequate number. Furthermore, the writer does not care to defend the basis of determining the importance of problems which was assumed at the beginning of the preceding paragraph: in fact, he is certain that the assumption cannot be successfully defended in the case of particular problems.

Table 2 is significant in another respect. If a type problem needs to be repeated in a text 108 times or even 20 times in order to teach satisfactorily the facts and principles upon which its solution is based, it is then obvious that the occurrence of a type problem only once or twice cannot possibly be satisfactory. On the other hand, if one or two occurrences are sufficient to teach a type problem, repeating a type 20 times or more is unwise.

This lack of wisdom in the make-up of our present texts becomes even more obvious when the nature of the type problems is considered. In general, the types which appear only once or twice in a text are much more complex than the ones which appear with a higher degree of frequency. The types with the five highest frequencies are:

At \$1.75 each, what will 17 books cost?

A man borrowed \$250 on January 15, at 6%. How much was the interest on October 15?

If I borrow \$50, at 6%, on February 8 of this year, how much will be due on May 2 of next year?

What change should be received from a five-dollar bill in paying a monthly bill for 30 qt. of milk at 8 a quart, and 5 jars of cream at 15c a jar?

What is the cost of 50 gal. of paint at $66\frac{2}{3}$ cts. a gallon, and $4\frac{1}{2}$ gal. of varnish at \$1.25 a gallon?

This problem occurred only once:

A milk dealer received in one month 257,595 lb. of milk, for which he paid $1\frac{1}{2}$ c a pound. The cost of shipping, filtering, pasteurizing, bottling, and factory and office expense amounted to 12c per gallon. Milk weighs 8.5 lb. per gallon and sells at 8c per quart. How much did the dealer make or lose on his month's business?

It is obvious that simpler types occur within the more complex types, thus making their real frequency much greater than has been given.

This preliminary investigation is being extended to include other texts and other sources of problems, and it is planned to subject the problems thus collected to systematic evaluation.

CHAPTER VIII

A SURVEY OF THE SOCIAL AND BUSINESS USE OF ARITHMETIC

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The large question in arithmetic for several years has related to the amount of arithmetic needed for actual social and business usage. This question was brought prominently before the minds of educators by Dr. Frank M. McMurry a few years ago when he presented before the Superintendence Section of the National Education Association a statement of principles for the elimination of useless subject matter. In general, these principles called for the elimination of all subject matter not meeting directly real needs of life.

In connection with the working out of a course of study in arithmetic at Connersville, Indiana, a few years ago, an attempt was made to get the judgment of the business community on a number of arithmetic topics. As a result of this cooperation, the business men of the city voted to omit the following topics from the arithmetic course:

Troy weight	Compound fractions
Apothecaries weight	Foreign exchange
Longitude and time	Compound proportion
The surveyors' table	True discount
The greatest common divisor	Cases 2 and 3 in percentage
The least common multiple	Compound interest
Complex fractions	Partial payments
Cube root	Partnership

This same business community, through their merchants, bankers and factory superintendents, expressed themselves in favor of more attention in the public schools to the following topics (which were submitted to them in this form):

Saving and loaning money.
Mortgages.
Modern banking methods.

Building and loan associations.

Keeping simple accounts.

Investing money.

Bonds as investments.

Real estate as investment (cheap rentals, good residence property, business blocks, or farm lands—as investments).

Marks of a good investment. (It is estimated that the get-rich-quick concerns fleece the American people out of \$60,000,000 a year.)

Taxes, levies, public expenditures.

Profits in different lines of business.

Life insurance as protection and investment.

These returns from business men, taken together with progressive changes in arithmetic courses throughout the country led the teachers of Connersville to make the following recommendation with reference to the omission of topics from the arithmetic course.

On the basis of the business requirements of the large majority of the community, the following traditional subjects should be entirely eliminated or attended to only after the essentials have been mastered:

1. Long method of greatest common divisor.
2. Most of least common multiple.
3. Long, confusing problems in common fractions.
4. Long method of division of fractions. (Always invert and multiply.)
5. Complex and compound fractions.
6. Apothecaries weight, troy weight, the furlong in long measure, the rood in square measure, dram and quarter in avoirdupois weight, the surveyors' table, the table of folding paper, tables of foreign money, all reduction of more than two steps.
7. Most of longitude and time.
8. Cases in percentage. (Make one case by using x and the equation.)
9. True discount.
10. Most of compound and annual interest.
11. Partial payments, except the simplest.
12. Profit and loss as a separate topic.
13. Partnership.
14. Cube root.

The Connersville course in arithmetic was the subject of study and criticism by Dr. Jessup and other members of the Educational Department at the University of Iowa. It was also a basis of special study by Dr. Coffman at the University of Illinois. These two men conceived the notion of submitting the problems of elimination and enrichment to the superintendents of all cities of the United States with a population of four thousand and over. Blanks were accordingly prepared and returns were received from 867 cities as well as 114 county superintendents throughout the country. This study by Drs. Jessup and Coffman shows, as reported in the *Fourteenth Yearbook* of this Society, a strong tendency among the superin-

tendents to accept the general proposition of either eliminating or giving less attention to the topics originally suggested by Dr. McMurry and added to, or changed, by further study. The returns showed also a strong tendency among the superintendents in favor of more attention to economic and business applications of arithmetic.¹

TABLE 1
SUBJECTS CHECKED ONCE, OR TOPICS SLIGHTLY USED. RESULTS IN PER CENTS

Occupations	Number	L. C. M.	Long Method G. C. D.	Apoth. Wt.	Table of Folding Paper	Foreign Exchange	% and Rate Given Find Base	Partial Payments	Cube Root	Complex Fractions	Troy Wt.	Surveyors' Table	Table of Foreign Money	True Discount	Partnership With Time	Compound Proportion	Metric System
Farmers	148	10	6	9	0	2	16	19	6	9	7	14	4	11	3	5	3
Housekeepers	50	4	0	4	0	2	6	4	0	6	0	2	2	0	0	0	6
Merchants	190	9	6	8	1	4	20	26	5	10	11	4	6	15	7	4	13
Professional people.	100	9	12	18	3	5	20	25	16	13	16	13	9	9	10	6	21
Bankers	47	13	4	0	6	40	23	29	4	21	6	9	42	21	6	6	6
Retired	18	11	0	16	6	0	11	22	6	11	16	6	6	22	11	0	0
Tradesmen	119	12	5	3	5	4	14	19	3	12	5	9	4	14	6	4	4
Total	672	10	6	8	2	6	17	22	6	11	9	9	8	13	6	5	9

This table should be read as follows: Of the 148 farmers reporting, 10% indicated some little use for L. C. M., 6% for G. C. D., 9% for apothecaries weight, 0% folding paper table, etc.

NOTE.—Returns show that true discount is wrongly reported. Except in one case, it is trade discount.

The question still remained, however, in its original form: "What arithmetic is actually needed by social and business usage?"

A committee of the Iowa State Teachers' Association attempted to gather data from all parts of the state through a system of checking of topics. On the basis of this checking, a slight use of topics was indicated as reported in Table 1. The reports on a considerable use of topics are summarized in Table 2. These tables are interesting as showing that people, when they sit down and

¹While this study is based entirely upon the opinion of professional men, it is very significant as showing that in the course of ten years, since Dr. McMurry enunciated his principles, there had developed a majority opinion in their favor. It may properly be added that superintendents in the larger cities, such as expressed opinion in this study, while in general the most progressive, are at the same time slightly older, more mature and therefore inclined to be unusually sensible in their conservatism.

TABLE 2

SUBJECTS CHECKED TWICE, OR TOPICS CONSIDERABLY USED. RESULTS IN PER CENTS

Occupations	Number	L. C. M.	Long Method G. C. D.	Apoth. Wt.	Table of Folding Paper	Foreign Exchange	% and Rate Given Find Base	Partial Payments	Cube Root	Complex Fractions	Troy Wt.	Surveyors Table	Table of Foreign Money	True Discount	Partnership With Time	Compound Proportion	Metric System
Farmers	148	1	1	3	0	1	2	2	2	1	1	1	1	2	0	1	1
Housekeepers	50	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Merchants	190	3	1	8	0	0	4	5	2	4	6	1	1	6	1	1	5
Professional people..	100	4	0	9	2	0	7	10	3	1	1	7	0	5	3	6	12
Bankers	47	0	0	0	0	8	2	53	0	0	2	2	0	11	2	2	0
Retired.	18	0	0	0	0	0	0	17	0	0	0	11	0	5	5	0	0
Tradesmen	119	4	1	0	1	0	4	7	2	4	0	1	1	3	1	1	3
Total	672	3	1	5	½	1	3	9	2	2	2	2	1	5	1	2	4

This table should be read the same as Table 1. Of 148 farmers reporting, 1% reported considerable use for Least Common Multiple, etc.

think about it, judge that they have very little use for these topics. Table 3 shows the per cent of each class which made use of not a single topic, of one topic, two topics, etc. It shows, for instance, that 42 per cent of the 672 people reporting had no use for any of the topics. It is thought that this is significant material as showing that social and business usage does not demand a number of the topics now generally included in the arithmetic course. It must be admitted, however, that even the opinions of people themselves are not thoroughly reliable. They are still opinions. The question still remained as to the actual demand of social and business usage.

TABLE 3
NUMBER OF TOPICS CHECKED, %

% of number reporting who checked number of topics as follows:

Occupations	No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Farmers	148	51	15	10	5	8	5	2	1	1	1	0	0	0	0	0	0	0
Housekeepers	50	82	2	10	4	2	0	0	0	0	0	0	0	0	0	0	0	0
Merchants	190	32	18	19	11	9	4	5	1	1	0	1	1	0	0	0	0	0
Profess'l people	100	25	20	9	12	10	10	6	3	2	2	0	0	1	0	0	0	0
Bankers	47	8	6	23	28	13	13	0	2	2	2	0	0	0	0	0	0	0
Retired	18	61	0	0	22	0	0	5	5	0	5	0	0	0	0	0	0	0
Tradesmen	119	52	13	13	5	5	5	0	2	3	0	2	0	0	0	0	0	0
Total	672	42	15	14	10	8	6	4	2	1	1	1	1-6	1-6	0	0	0	0

This table should be read as follows: Of the 672 making returns, 148 were farmers. 51% of the farmers had no use for any of the topics, 15% checked one topic, 10% checked two topics, etc. No farmer checked as many as ten of the sixteen topics.

In an attempt to get an answer to this question in a more definite form, the plan of having mature people note their problems through a period of time was conceived and finally carried out through the coöperation of superintendents and teachers. The plan is a very simple one and merely asks that the sixth, seventh, and eighth-grade pupils in any system of schools where the plan is being carried out shall collect through a period of two weeks every problem solved by either the father or the mother. Superintendents report that pupils have no difficulty in understanding the plan and in filling in the blanks in a satisfactory manner. The pupils themselves are interested, as they easily see the significance of the study. It gives them also problems that are actually being used by mature

TABLE 4
SOURCE OF INFORMATION CONCERNING USE OF ARITHMETIC IN DAILY LIFE

	OITY	POPULATION	PERSONS	PROBLEMS
1.	Van Cleve, Ia. (Con.).....	75	11	35
2.	Luther (Con.)	130	24	37
3.	Gillett Grove (Con.).....	150	12	17
4.	Somers (Con.)	169	45	174
5.	Martelle (Con.)	178	27	110
6.	Meservey (Con.)	150	15	45
7.	Terrill (Con.)	253	23	69
8.	Tracy (Con.)	300	36	57
9.	Galva (Con.)	357	11	25
10.	Greenville (Con.)	400	13	24
11.	Zearing	461	20	52
12.	Jessup (Con.)	697	73	243
13.	Gladbrook	869	129	480
14.	Story City.....	1387	47	180
15.	Sigourney	2032	25	85
16.	Marshalltown	13374	732	2992
17.	Other Parts of Iowa.....	.....	129	261
18.	Duluth, Minn.	70,000	85	150
	SUMMARY.....		1457	5036

people and puts them in touch with actual situations demanding the use of arithmetic. Detailed directions need not be given at this point, but will be furnished any interested superintendent on application to the writer.

Following this plan, reports were received from 1457 persons in 18 different school systems, contributing 5,036 problems. These and other data with reference to source of the problems is shown in Table 4. Table 5 shows the distribution of the 1457 persons contributing to this study. It was decided beforehand that house-keepers should constitute as nearly 50 per cent of the total number

as possible. This is not quite realized—the number of housekeepers is 598, or about 41 per cent of the total. Since women make up 50 per cent of the population, and since girls stay in school as well or better than boys, it seems reasonable that the figuring done by women should be given proportionate consideration.

For Iowa, it was hoped that the reports from farmers might constitute 25 per cent of the total returns. Statistics show that

TABLE 5
OCCUPATIONAL DISTRIBUTION OF THE 1457 PERSONS WHOSE ARITHMETICAL PROBLEMS WERE REPORTED

Abstractor	2	Labor	29
Actor	1	Laundry Man	1
Advertising Manager	1	Lawyer	6
Architect	2	Liquor Business	1
Auctioneer	5	Liveryman	2
Auto Dealer	1	Lumberman	2
Baker	2	Mail Carrier	2
Banker	12	Mason	7
Barber	3	Mechanic	36
Blacksmith	8	Merchant	49
Bookkeeper	9	Milliner	1
Brick Dealer	3	Minister	7
Butcher	11	Motorman	1
Captain of Sal. Corps	1	Moulder	8
Carpenter	38	No. Occupation Given	28
Cashier	5	Paperhanger	4
Cigar Mfg.	1	Photographer	1
Clerk	32	Picture Show Mgr.	1
Coal Dealer	1	Plumber	3
Coal Miner	1	P. O. Employees	8
Contractor	12	Postmaster	1
Cook	1	Poultry Dealer	1
Cut Stone Contractor	1	Printer	17
Dairyman	1	Produce Dealer	1
Dance Hall Manager	1	Purchasing Agt.	1
Decorator	3	Railway Brakeman	3
Ditcher	2	" Employees	8
Doctor	11	" Engineer	1
Drayman	3	" Freight Handler	1
Dressmaker	5	" Ticket Agt.	5
Druggist	7	Real Estate Broker	13
Employment Agt.	1	Restaurant	5
Engineer	15	Retired Business Men	1
Express Messenger	1	R. R. Mailcarrier	1
Farmer	213	Sailor	1
Feedyard Manager	1	Salesman	2
Florist	1	School Principal	1
Garage Mgr.	3	Shoemaker	1
Gardener	1	Stock Dealer	13
Grain Dealer	9	Sup't.	3
Grocer	7	Teamster	17
Hardware & Tinner	12	Telephone Mgr.	1
Harnessmaker	41	" Operator	3
Housekeeper	598	Watchman	1
Iceman	1	Button Maker	3
Implement Dealer	8	Shop Foreman	15
Insurance Agt.	5	Miller	3
Janitor	6	Machine Repairer	5
Jeweler	5	Traveling Men	18
Junk Dealer	2	Well Digger	1

practically 50 per cent of the population of Iowa are living upon farms. Half of this number are male and it was reasoned that half of 50 per cent of the reports should be from farmers. This has not been quite realized. In fact, it is easier to get reports from business and professional people than it is from farmers and housekeepers. However, it is possible that the people of this kind should have a larger weighting in the total returns, assuming that they do more figuring than the ordinary housewife or farmer. The hundred occupations listed are fairly representative of Iowa conditions and doubtless represent the total population as well as any list that could be secured. There is a good representation of merchants, bankers, clerks, carpenters, laborers, mechanics, etc., showing that the sampling has been a random sampling and, therefore, representative.

After securing the problems, it was necessary to determine upon some plan for scoring and classifying them in order to give a proper analysis and understanding of the nature of the problems. It was decided to indicate the different processes, and the degree of difficulty of the processes as one item. For instance, addition is one of the processes considered. Under this, the problems are divided into one-place, two-place, three-place, four-place and more than four-place problems. Very few problems were encountered involving more than four places. A detailed discussion of each process is not possible in this brief report. The tables submitted, however, are more or less self-explanatory and will permit any one to draw his own conclusions. It is worthy of note that most of the work is in the fundamental processes and that the problems are simple—in addition, mostly two or three-place problems; in multiplication, mostly one or two-place multipliers, etc. The scheme used for listing fractions proved inadequate; if this could have been foreseen the complete list of all fractions used could easily have been given. However, most of the fractions with numerator of one and a denominator of one to five are made up of the fraction $\frac{1}{2}$. There is occasionally $\frac{1}{4}$, seldom $\frac{1}{3}$ or $\frac{1}{5}$. The scheme is comprehensive and permits the listing of all fractions under five groups. If a further study is made, all fractions will be listed and noted as to number.

TABLE 6

ANALYSIS OF PROBLEMS REPORTED FROM JESSUP CONSOLIDATED SCHOOL

POPULATION, 697

PERSONS REPORTING, 73

PROBLEMS, 243

	Auctioneer No. 1, Prob. 6	Banker No. 2, Prob. 10	Blacksmith No. 1, Prob. 5	Carpenter No. 1, Prob. 4	Day Laborer No. 1, Prob. 8	Drayman No. 2, Prob. 9	Farmer No. 24, Prob. 66	Housekeeper No. 86, Prob. 128	Janitor No. 1, Prob. 2	Manager No. 1, Prob. 1	Minister No. 1, Prob. 2	Poultry No. 1, Prob. 2
Addition												
1-Pl.	1						3	26				
2-Pl.		1										
3-Pl.					1	2	9	37				
4-Pl.						2	1	2		1		
Over 4-Pl.												
Total.	1	1			1	4	13	65		1		
Multiplication												
1-Pl.	1			1	4	4	16	38	1		2	
2-Pl.		3			1	2	8	16				1
3-Pl.		2				1	9					
4-Pl.												
Over 4-Pl.												
Total.	1	5		1	5	7	33	54	1		2	1
Subtraction												
1-Pl.												
2-Pl.		1	2	2			4	33	2			
3-Pl.		1	3				11	18				1
4-Pl.	1					2	2	1				
Over 4-Pl.							2	1				1
Total.	1	2	5	2		2	19	53	2			2
Division												
1-Pl.							2	2				
2-Pl.				1			5	4				
3-Pl.		1				1	2					
4-Pl.		1					2					
Over 4-Pl.												
Total.		2		1		1	11	6				
Fractions												
1/1 to 5.	2					3	5	7				
1/6 to 10.												
1/10+							1	3				
1+/1 to 5.							1	1				
1+/5+							1	1				
Total.	2					3	7	11				
U. S. Money												
1-Pl.												
2-Pl.	1	3	2	4	1	5	19	91	1		1	
3-Pl.		3	4	1	7	5	32	54	2	1	1	1
4-Pl.	1	1			1	3	11	8		1		
Over 4-Pl.	3	3					9			1		1
Total.	5	10	6	5	9	13	71	153	3	3	2	2
Cubic Measure		2										
Liquid Measure							2					
Exchange.							1					
Interest	1	3					2					
Percentage	2	2					1	1				
Buying		1	4	4	7	9	68	90	2	1	2	2
Selling	4	3			1	1	20	11				2

TABLE 7
 SUBJECT MATTER OF THE PROBLEMS OF TABLE 6

	Auctioneer	Bankers	Blacksmith	Carpenter	Day Laborer	Draymen	Farmers	Housekeepers	Janitor	Manager	Minister	Poultry	Total
Butter		2											2
Books			1				1	1					3
Cattle							5						5
Clothing							3	3	1				7
Corn							6	1					7
Dry Goods					1	1	1	20					23
Eggs								5					5
Feed		1		1	1	1	5						9
Fuel					2	1	5	2			1		11
Groceries			3	2	1		7	54			1		68
Hardware					1		1		1				3
Hay						1	2						3
Hogs					1	1	11						13
Implements							1						1
Labor		1			1	4		2					8
Land							1						1
Live Stock							3						3
Lumber							1						1
Meat			1			1	1	3					6
Milk		1		1			4	1					7
Miscellaneous						1	4	23		1			29
Oats							2						2
Paper								1					1
Poultry	1							9				2	12
Sale	2												2

Tables have been arranged to show the complete analysis of the arithmetical processes and of the topics involved in the problems collected at Jessup, Story City and Marshalltown, Iowa. Lack of space prevents the presentation here of the details for the two last-named localities. In Tables 6 and 7 will be found the data for Jessup, a town of less than 1,000 population, which is fairly representative of most of the population groups of the state. Table is to be read thus: 73 adults reported 243 problems. One auctioneer reported six problems, two bankers 10 problems, etc. Of the 66 problems reported by 24 farmers, 13 demanded the use of addition (3 times of 2-place, 9 times of 3-place and one of 4-place addition). Of these 66 problems, the use of fractions was involved 5 times with a numerator of 1 and a denominator of 1, 2, 3, 4 or 5; once

with a numerator greater than 1 and a denominator greater than 5; United States money was involved 71 times, etc.

The analysis of problems and processes had not proceeded far until it was apparent that most problems involved either buying or selling. This, of course, means that United States money is involved. So that the typical arithmetical problem concerns buying or selling something at a certain price, and means either adding up

TABLE 8
ANALYSIS OF THE 5,036 PROBLEMS REPORTED

Addition,	1-Pl.....	30	Accounts	251
	2-Pl.....	706	Addition of Fractions.....	3
	3-Pl.....	748	Amount	11
	4-Pl.....	193	Area	1
	Over 4-Pl.....	65	Average Weight	14
	Total.....	1742	Banking	18
Multiplication,	1-Pl.....	1660	Board Measure	12
	2-Pl.....	904	Cancellation	26
	3-Pl.....	195	Capacity	10
	4-Pl.....	17	Circular Measure	1
	Over 4-Pl.....	3	Cubic Measure	56
	Total.....	2779	Debts	4
Subtraction	1-Pl.....	40	Decimals	5
	2-Pl.....	407	Discount	41
	3-Pl.....	406	Division of Fractions.....	1
	4-Pl.....	167	Dry Measure	5
	Over 4-Pl.....	65	Exchange	5
	Total.....	1085	Insurance	10
Division	1-Pl.....	334	Interest	66
	2-Pl.....	319	Liquid Measure	14
	3-Pl.....	121	Making Change	3
	4-Pl.....	48	Measuring	21
	Over 4-Pl.....	5	Percentage	217
	Total.....	839	Plastering	2
Fraction	1	534	Practical Measurement	79
	2-5		Profit and Loss.....	16
	1		Proportion	5
	6-10	12	Receipts	1
	1		Square Measure	27
	10+		Taxes	6
	1+		Time Measure	13
	1-5		Buying	3128
	1+	86	Selling	646
	5+		Topics	
	Total.....	1035		
U. S. Money	1-Pl.....	23		
	2-Pl.....	2982		
	3-Pl.....	1714		
	4-Pl.....	550		
	Over 4-Pl.....	247		
	Total.....	5516		

to see the total, multiplying by the number of items to get a total, or subtracting cost price from selling price in order to find the profit.

Table 8 summarizes the analysis of all of the 5,036 problems from the sixteen Iowa towns and cities, the one Minnesota city, and the 702 problems collected from all parts of Iowa, many of them from rural schools. This table shows again that most of the problems involved either buying or selling, involved a money transaction, and required for solution only one of the fundamental processes. The processes of more or less prominence in addition to the fundamental processes are percentage, accounts, interest, cancellation, and discount. The measuring done is mostly either weighing or determining capacity. Only the simplest tables are used.

TABLE 9
SUBJECT MATTER OF THE 5,036 PROBLEMS REPORTED

Amusements	3	Labor	208
Books	14	Land	37
Boxes	1	Laundry	2
Butter	68	Leather and Hides.....	17
Car fare	13	Light	13
Carpet	10	Lodge Dues	1
Cattle	69	Lumber	31
Cement	2	Lunches	2
Church dues	3	Machinery	4
Clothing	180	Meat	170
Construction	5	Medical Aid	1
Corn	62	Merchandise	6
Dentist Work	1	Milk	119
Distance	10	Miscellaneous	505
Dress Goods	15	Mortgage	1
Drugs	7	Music	1
Dry Goods	383	Oats	12
Eggs	73	Oil	20
Electricity	16	Paint	14
Farm Products	68	Paper	46
Feed	43	Pastry	3
Fencing	5	Plaster	3
Flour	15	Potatoes	33
Food	8	Poultry	82
Freight 4	9	Real Estate	13
Fruit	35	Recipes	3
Fuel	208	Rent	39
Furnishings	7	Roofing	1
Furniture	27	Shoes	15
Glassware	3	Stamps	20
Grain	61	Stationery	2
Groceries	1053	Steel	5
Handwork	1	Telephone	6
Hardware	77	Tile and Brick.....	4
Hay	43	Water	5
Hogs	96	Weight	4
Horses	25	Wheat	7
House and Lots.....	6	Yield	1
Ice	4	Sheep	3
Implements	29		

SUBJECT MATTER

There is very proper interest in determining the subject matter or items that should receive consideration in the arithmetic work. If people are buying and using money, what are the articles bought or sold? Are they stocks, bonds and railway ties, or are they groceries, clothing, hogs, corn, and oats? There is a certain amount of informational work involved in all arithmetic instruction. The processes must be applied to specific things and they are more easily applied if these things are fundamental and connect with familiar business transactions. An examination of Table 9 shows the topics involved in the 5,036 problems and the order of their frequency. Groceries stand at the top of the list. It appears that women do most of the buying, and that, for the most part, they buy groceries. This item is followed by dry goods, fuel, clothing, meat, etc. Labor is also frequently involved in the problems. This is in the form of figuring wages. Evidently, the imaginary problem based upon conditions connected with the New York stock exchange is quite foreign not only to the usual Iowa boy or girl, but also to the Iowa adult. The tables make it plain also that the arithmetic demanded is mostly very simple, and compel us to conclude that our arithmetics, as at present organized for the schools, are entirely too difficult and embrace material, traditional or otherwise, which is quite foreign to the usual situation in which arithmetic is used.

In order to reach conclusions with reference to the types of problems handled in particular occupations, tables were made up for a number of these occupations—housekeepers, farmers, merchants, etc. The table showing the figuring done by farmers is given herewith (Tables 10 and 11). It appears that United States money is involved in almost all of the 586 problems reported by farmers. In half the cases, buying was involved; in a slightly smaller number, selling. The things bought or sold are for the most part live stock or grain, groceries or clothing. The list is quite limited, as one would expect who is at all familiar with farms and farm conditions. The fundamental processes are the chief ones used. Fractions are used very little, and $\frac{1}{2}$ is the most common

TABLE 10
ANALYSIS OF 586 PROBLEMS FROM 213 FARMERS

Addition	1-Pl.....	3	Accounts	12	
	2-Pl.....	18		Board Measure	2
	3-Pl.....	49		Cancellation	4
	4-Pl.....	31		Capacity	1
Over	4-Pl.....	11	Circular Measure	2	
Multiplication	Total.....	112	Cubic Measure	14	
	1-Pl.....	181	Decimals	2	
	2-Pl.....	206	Discount	3	
	3-Pl.....	65	Distance	5	
Over	4-Pl.....	8	Dry Measure	1	
	4-Pl.....	1	Exchange	1	
	Total.....	461	Feeding Stock	8	
	Subtraction	1-Pl.....	1	Insurance	0
2-Pl.....		17	Interest	12	
3-Pl.....		22	Liquid Measure	6	
4-Pl.....		18	Partial Payments	1	
Over	4-Pl.....	19	Percentage	14	
Division	Total.....	77	Practical Measure	21	
	1-Pl.....	27	Proportion		
	2-Pl.....	49	Rent	2	
	3-Pl.....	28	Square Measure	4	
Over	4-Pl.....	13	Taxation	2	
	4-Pl.....	1	Time	3	
	Total.....	118	Trading	1	
	Fractions	1.....		Weight	1
2-5.....		51	U. S. Money 1-Pl.....	9	
1.....			2-Pl.....	233	
6-10.....		1	3-Pl.....	174	
1.....			4-Pl.....	88	
10+.....			Over 4-Pl.....	54	
1+.....			Total.....	558	
1-5.....			Buying	286	
1+.....		8	Selling	211	
5+.....		5			
Totals.....	65				

TABLE 11
SUBJECT MATTER OF 586 PROBLEMS FROM 213 FARMERS

Alfalfa	1	Implements	5
Butter	1	Labor	20
Clothing	8	Land	12
Coal	18	Light	1
Corn	27	Lumber	6
Cows	46	Meat	8
Drugs	2	Milk	9
Dry Goods	3	Miscellaneous	28
Eggs	2	Oats	5
Farm Produce	30	Oil	3
Flour	6	Paper	3
Fruit	8	Plastering	1
Fuel	8	Postage	2
Furniture	3	Potatoes	1
Furs	3	Poultry	17
Groceries	39	Real Estate	9
Grain Feed	55	Rent	3
Hardware	8	Sheep	1
Hay	17	Steel	1
Hogs	69	Water	2
Horses	17	Wool	1

fraction. A numerator of more than one appears in only 13 of the 586 problems. In addition to the fundamental processes, some use is made of practical measurements—such as stepping land,—of percentage, interest, accounts, and cubic measure. A typical problem for a farmer would involve United States money (95 per cent of all cases), would involve buying (55 per cent of all cases), would involve a fundamental process (80 per cent of all cases), would involve multiplication (40 per cent of all cases), and the chances are that it would be a two-place multiplier. This typical problem would be buying or selling of hogs, *e.g.*, “Sold 10 hogs, weighing a total of 2150 lbs., at 9c. What is the amount of the check?”

It was not possible in the short time available for scoring these 5,036 problems, to do all of the work personally, nor was it possible to check results fully. The help used was competent, and the results are believed to be sufficiently accurate to warrant conclusions. Enough of the data are presented to permit the reader to reach his own conclusions. The report should be considered more or less preliminary to a larger study which will seek to interpret more fully the significance of the data presented.

CONCLUSIONS

1. The opinions of business men and of educators that many arithmetical processes consuming much time could be omitted from the course without loss, is borne out quite fully by this survey of the social and business usage of arithmetic. The facts go further than the opinions and are a safer guide.

2. The problems solved in actual usage are brief and simple. They chiefly require the more fundamental and more easily mastered processes.

3. In actual usage, few problems of an abstract nature are encountered. The problems are concrete and relate to business situations. They require simple reasoning and a decision as to the processes to be employed.

4. The study justifies careful consideration of the following question: After the development of reasonable speed and accuracy in the fundamentals and the mastery of the simple and more useful arithmetical processes, should the arithmetic work not be centered

largely around those problems which furnish the basis for much business information?

5. Another question: May we not hope through the use of large informational problems and situations in the upper grades, to secure a more intelligent application of arithmetic to actual life situations, *i.e.*, to secure the use of more arithmetic in the productive work of the kitchen, in intelligent buying, in proper farm accounting, in intelligent saving and investing, etc.?

6. Aside from the work implied by the questions raised in 4 and 5 above, it is evident that the necessary work in arithmetic can be mastered in much less time than is now being devoted to it.

CHAPTER IX

PRESENT-DAY MINIMAL ESSENTIALS IN UNITED STATES HISTORY AS TAUGHT IN THE SEVENTH AND EIGHTH GRADES

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In a preliminary report on minimal essentials in United States history, published as Chapter IX of the *Fourteenth Yearbook*, the present writer suggested the importance of determining the names and topics common to different textbooks in history in order to learn with some measure of precision the materials that are now looked upon as minimal essentials in this subject, and in order to have an intelligent basis for whatever additions or eliminations may be needed in the immediate future. The work thus projected was carried out under the writer's direction during the years 1914 and 1915, and the results were published as Bulletin No. 16 of the School of Education, University of Illinois.¹ Twenty-five elementary textbooks representing four successive periods of publication between 1865 and 1912 were utilized in this study, and the principal results are based upon a careful analysis of twenty-three of these books.

The present paper embodies a summary of the names and topics that were found to be common to all of twenty-three books, together with additional names and topics common to at least three-fourths of the books. A few topics that are found in fewer than three-fourths of the books are also included particularly where they

¹W. C. Bagley and H. O. Rugg, *The Content of American History as Taught in the Seventh and Eighth Grades: an Analysis of Typical School Textbooks*. Urbana: Published by the University of Illinois, 1916. 59 pp.

coincide with the recommendations of the Committee of Eight of the American Historical Association.²

No attempt has been made here to indicate the relative proportions of textbook space devoted to each of the topics; these and other details may be found in the *Bulletin* referred to. The general distribution of space for the larger groups of topics as averaged from seven books published between 1904 and 1912 appears below in comparison with the distribution of emphasis recommended by the Committee of Eight:

	Average Per Cent of Total Space	Committee of Eight
Period of exploration and discovery.....	8.27	12.90
Period of colonial development.....	15.95	21.20
Period of colonial wars.....	3.67	3.10
Prerevolutionary period	4.11	2.06
The War of the Revolution.....	9.58	14.40
1783-1812	14.17	8.70
1812-1861	21.01	22.70
The Civil War	10.22	6.10
1865—Present Time, or Publication-date.....	14.45	9.30
	<hr/>	<hr/>
<i>Check</i>	101.43	100.46

In the following tabular statement of names and topics, printing in SMALL CAPITALS indicates that the topic or the name is found in each of the twenty-three books; printing in lower-case type without parentheses indicates that the name or the topic is found in at least three fourths of the twenty-three books; printing in lower-case within parentheses indicates that the name or topic is found in fewer than three fourths of the books but either that it is found in so large a proportion as to warrant its inclusion or that it is recommended by the Committee of Eight (very frequently both).

The plus signs (+) and minus signs (—) appearing after certain of the topics indicate that the amount of space devoted to the topic has either noticeably increased or noticeably decreased during the four periods of publication. Where the increase or decrease has

²*The Study of History in the Elementary Schools.* Report to the American Historical Association by the Committee of Eight. New York: Chas. Scribner's Sons, 1909. Pp. xxii, 141.

been particularly marked, two or more plus or minus signs are used to indicate the tendency.

Topics marked with an asterisk (*) are to be found among the recommended topics of the Committee of Eight.

In as much as four of the books used in the study were published immediately after the Civil War and in as much as the remaining books were published at successive intervals from 1881 to 1912, no attempt has been made to list topics and names referring to events since the assassination of Lincoln.

I. Period of Discovery and Exploration

TOPICS	NAMES
*AMERICA BEFORE COLUMBUS (—)	
*DISCOVERIES OF THE NORTHMEN	
The Indians	
The Mound-Builders	
*EUROPEAN BACKGROUND (+)	
*The Crusades	
*Trade with the Orient and demand for sea-routes	
*Geographical knowledge at the close of the fifteenth century	
*SPANISH EXPLORATIONS AND SETTLEMENTS	COLUMBUS Magellan De Soto Balboa Cortez De Leon (Coronado)
*PORTUGUESE EXPLORATIONS	Da Gama
*FRENCH EXPLORATIONS AND SETTLEMENTS	Verrazano Cartier (Champlain)
*DUTCH EXPLORATIONS	(Hudson)
*ENGLISH EXPLORATIONS	JOHN AND SEBASTIAN CABOT RALEIGH Gilbert Drake White (Frobisher)

II. Period of Colonial Development (—)

- *PLYMOUTH AND MASSACHUSETTS BAY
 - *Pilgrims and Puritans in England
 - *Voyage of the Mayflower and
Mayflower compact (—)
 - *Settlement of Plymouth Massasoit
(Miles Standish)
(William Bradford)
 - *Settlement of Boston and vicinity JOHN ENDICOTT
 - Charter difficulties
 - Witchcraft (—)
 - The people of colonial New Eng-
land (+)
 - (Founding of Harvard University)
- *RHODE ISLAND: settlement of Providence ROGER WILLIAMS
- *CONNECTICUT
 - *Settlements at Hartford and New
Haven (—) (Thomas Hooker)
 - First written constitution (—)
 - Pequod war (—)
 - (King Philip's war) (—)
 - (Charter difficulties and "Charter-
oak" episode) SIR EDMOND ANDROS
- *NEW YORK
 - *First settlement
 - Dutch rule (—) Peter Stuyvesant
 - English conquest and rule
 - (Geisler's rebellion?)
 - (Patroon system?)
- New Jersey
 - Grants to Berkeley and Carteret Lord John Berkeley
 - (Settlements) George Carteret
 - Division in East and West Jersey
 - (Creation of a royal colony)
- *PENNSYLVANIA
 - *William Penn and the Quakers WILLIAM PENN
 - Grants to Penn
 - *Founding of Philadelphia
 - The "Great treaty" (—)
 - (Mason and Dixon line)
- Delaware: settlements (—) Lord de la Ware

***Maryland**

The Calverts

George Calvert
(Lord Baltimore)

(Settlements)

Claiborne's rebellion

William Claiborne

The Toleration act

(Charter and government)

***VIRGINIA**

*Settlement at Jamestown (—)

“Starving time” (—)

*First representative assembly

*Slavery introduced

Bacon's rebellion

(Indian troubles)

(Tobacco culture)

(Indentured servants)

John Rolfe
JOHN SMITH (—)
Sir Thomas Dale
Pocahontas (—)
Powhatan

SIR WILLIAM
BERKELEY
Nathaniel Bacon

The Carolinas

Settlements

The “Grand model”

(John Locke)

(Huguenots)

(Division into North and South
Carolina)

(Rice and indigo culture)

Georgia

Oglethorpe's plan

JAMES OGLETHORPE

Spanish invasion

(Settlement of Savannah)

III. Colonial Wars (—)

***King William's war (—)**

*Causes (+)

Port Royal (—)

(European background)

(Treaty of Ryswick) (+)

(Schenectady)

(Haverhill)

*Queen Anne's war (—)

*Causes (+)

Port Royal (—)

Treaty of Utrecht (—)

King George's war (—)

Causes

Siege of Louisburg (—)

Treaty of Aix-la-Chapelle (+)

*FRENCH AND INDIAN WAR

*EUROPEAN BACKGROUND

WILLIAM PITT
(Edmund Burke)

*CAUSES (+)

WASHINGTON'S JOURNEY TO THE
FRENCH POSTS (—)WASHINGTON
Dinwiddie

BUILDING OF FORT DUQUESNE (—)

*BRADDOCK'S DEFEAT (+)

BRADDOCK

*CONQUEST OF QUEBEC (—)

WOLFE

Montcalm

TREATY OF PARIS (+)

Fort Necessity (—)

Acadian exile (—)

Forbe's expedition (—)

Reduction of Louisburg (—)

Ticonderoga

(Albany convention)

IV. Prerevolutionary Period (+)

*POLITICAL, SOCIAL, AND INDUSTRIAL CON-
DITIONS IN THE COLONIES (+++)

*POLICY OF ENGLAND TOWARD THE COLONIES (George III)

William Pitt

STAMP ACT

Samuel Adams

James Otis

BOSTON MASSACRE

Gage

*TOWNSHEND ACTS³

BOSTON TEA-PARTY

BOSTON PORT BILL

WRITS OF ASSISTANCE

*FIRST CONTINENTAL CONGRESS

PATRICK HENRY

*RESULTS OF ENGLAND'S POLICY
(Committees of correspondence)

*Not always so entitled.

V. The War of the Revolution (—)

*EUROPEAN BACKGROUND (ENGLAND AND FRANCE)	S. Adams Otis FRANKLIN William Pitt George III
*LEXINGTON AND CONCORD	GAGE
*BUNKER HILL (—)	Prescott Putnam
SIEGE OF BOSTON (—)	HOWE (Gen.)
CROWN POINT AND TICONDEROGA	Allen
WASHINGTON ASSUMES COMMAND	WASHINGTON
*DECLARATION OF INDEPENDENCE	Jefferson
*LONG ISLAND (—)	Howe (Admiral)
*RETREAT THROUGH NEW JERSEY (—)	LAFAYETTE
*VALLEY FORGE	De Kalb Sullivan
*TRENTON (—)	BURGOYNE
*PRINCETON (—)	Gates Schuyler Stark Morgan Chas. Lee
*BURGOYNE'S CAMPAIGN (+)	CLINTON
MONMOUTH (—)	ARNOLD Andre
*ARNOLD'S TREASON (—)	CORNWALLIS Lincoln GREENE
CAMDEN (—)	Montgomery
*COWPENS (—)	Wayne
*GUILFORD COURT HOUSE (—)	
*YORKTOWN (—)	
*TREATY OF PARIS	
The invasion of Canada (— —)	
Fort Moultrie (—)	
Brandywine	
Germantown	
Stony Point	

Guerilla warfare in the south (— —)	Marion Sumter Pickens "Lighthorse Harry" Lee
Eutaw Springs (—)	
*King's Mountain	
*Savannah (—)	
*Naval encounters	Jones
*Expedition of George Rogers Clark (+)	Clark
(Organization under Articles of Confederation)	

VI. The Period from 1783 to 1812 (++++)

SOCIAL CONDITIONS UNDER THE CONFEDERATION

*POLITICAL CONDITIONS UNDER THE CONFEDERATION (+++)

*TERRITORIAL GROWTH AND EXPANSION (NORTHWEST TERRITORY AND LOUISIANA PURCHASE) (+++)

*WASHINGTON'S ADMINISTRATIONS WASHINGTON

*ADAMS'S ADMINISTRATION (+) JOHN ADAMS

*JEFFERSON'S ADMINISTRATIONS JEFFERSON

MADISON'S ADMINISTRATION TO 1812 (—) . . . MADISON

*Constitutional convention (++)

*Adoption and ratification of the Constitution Franklin

*First presidential election

*Washington's inauguration (—)

*Formation of Washington's cabinet (+) H. Knox

National-bank and currency issues HAMILTON

Marshall

BURR

Rise of political parties (++)

The new capital (—)

Indian troubles (—)

Tecumseh

W. H. Harrison

*Relations with France

NAPOLEON

Genet

Relations with England

*Jay's treaty (—)

JAY

Chesapeake affair (—)	
*Alien and sedition acts (+)	
Burr's conspiracy	
Invention of steamboat	Fulton
*Lewis and Clark expedition (+ +)	Lewis Clark
(Barbary States troubles and treaties)	Pinckney (Decatur)
(Whisky rebellion)	
(Shays' rebellion)	(Shays?)
(Ordinance of 1787) (+ +)	

VII. The Period from 1812 to 1861 (+ +)

A.* THE WAR OF 1812 (—)

*CAUSES	MADISON Tecumseh W. H. Harrison
*SURRENDER OF DETROIT	William Hull
*NAVAL BATTLES	Isaac Hull Lawrence O. H. Perry McDonough
*BURNING OF WASHINGTON	
*TREATY OF GHENT	
*NEW ORLEANS	JACKSON
Hartford convention	

B. THE WAR WITH MEXICO (—)

*CAUSES	
BUENA VISTA (—)	TAYLOR SANTA ANA SCOTT
VERA CRUZ (— — —)	
CERRO GORDO (— — —)	
*CAPTURE OF THE CITY OF MEXICO (— — —)	
*MONTEREY AND CALIFORNIA (— —)	FREMONT KEARNY

*RESULTS OF WAR: TERRITORIAL
ACCESSIONS

*Texan independence and admission

- | | | |
|---|-------------------|----------------|
| C. *POLITICAL AFFAIRS, INCLUDING
SLAVERY PROBLEMS (+) | } | MADISON |
| | | MONROE |
| *CAUSES OF FRICTION BETWEEN
NORTH AND SOUTH (+ +) | | J. Q. ADAMS |
| | | JACKSON |
| *THE MISSOURI COMPROMISE (+ +) | | VAN BUREN |
| | | HARRISON |
| *CALIFORNIA AND THE COMPROMISE
OF 1850 | | TYLER |
| FUGITIVE SLAVE LAW | | J. K. POLK |
| *KANSAS-NEBRASKA LAW AND RE-
LATED EVENTS 1854 | | ZACHARY TAYLOR |
| *JOHN BROWN'S RAID | | CLAY |
| Wilmot proviso | Millard Fillmore | |
| *Dred Scott decision | Pierce | |
| Work and influence of the
abolitionists (+ + +) | Buchanan | |
| (Lincoln-Douglas debates) | Webster | |
| | Calhoun | |
| | Douglas | |
| | Lincoln | |
| | John Brown | |
| | (Garrison) | |
| | (Sumner) | |
| D. *INVENTION, INDUSTRY, AND
COMMERCE (+ + +) | | |
| *Invention of the telegraph (+ + +) | Morse | |
| Other inventions (+ + +) | (Cyrus McCormick) | |
| | (Samuel Slater) | |
| | (Howe) | |
| *Railroads and related topics (+ + +) | | |
| *Canal development (+ + +) | (De Witt Clinton) | |
| (The Industrial revolution) (+ +) | | |
| (Mining development) (+ +) | | |
| E. FOREIGN AFFAIRS (+ + +) | | |
| *Monroe doctrine and related events
(especially struggle for inde-
pendence in Spanish America) | (Bolivar) | |
| Other foreign affairs (+ + +) | Dorr | |
| F. FINANCE | | |
| *UNITED STATES-BANK ISSUE (+) | | |
| TARIFF DISCUSSION AND LEGISLA-
TION (+ +) | | |
| *Financial panics (especially 1837) | | |
| Currency problems | | |

G. TERRITORIAL GROWTH AND EXPANSION (—)

ADMISSION OF NEW STATES (—)

*Mexican cessions

Florida

The Oregon country (+ +)

*Settlement of the west

VIII. The Civil War (—)

*SECESSION

LINCOLN

DAVIS

Scott

*FORT SUMTER AND EVENTS IMMEDIATELY
ASSOCIATED (—)

ANDERSON

BEAUREGARD

MCDOWELL

T. J. JACKSON

MASON

SLIDELL

Wilkes

*THE BLOCKADE

*THE PENINSULAR CAMPAIGN (—)

LEE

MCCLELLAN

*FORTS HENRY AND DONELSON

GRANT

Foote

*SHILOH

A. S. Johnston

BUELL

NEW ORLEANS (— —)

FARRAGUT

*MERRIMAC AND MONITOR (—)

Ericsson

*ANTIETAM

(Worden)

*FREDERICKSBURG

BURNSIDE

*EMANCIPATION PROCLAMATION

*CHANCELLORSVILLE

HOOKER

*GETTYSBURG

MEADE

(Pickett)

*VICKSBURG (—)

SHERMAN

Pemberton

*CHICKAMAUGA

BRAGG

THOMAS

ROSECRANS

*BATTLES AROUND CHATTANOOGA (— —)

J. E. JOHNSTON

*THE WILDERNESS CAMPAIGN

*ATLANTA AND SHERMAN'S MARCH

HOOD

EARLY'S RAID	EARLY
SHERIDAN'S CAMPAIGN (—)	SHERIDAN
FALL OF RICHMOND	
APPOMATTOX	
ASSASSINATION OF LINCOLN	
Contest for Missouri	Fremont
	Pope
Murfreesboro	
Mobile Bay	
Nashville	
Morgan's raid	
The Baltimore incident	
Admission of West Virginia	
New York draft riots	
Roanoke Island	
Red River expedition	Banks

In the following chapter there are reported the results of investigations made under the direction of Dr. Ernest Horn, of the University of Iowa, with the aim of discovering whether the present content of elementary history meets the needs involved in the interpretation of present-day problems. It is to be hoped that other investigations will be undertaken bearing from other points of view upon the worth and significance of the topics and names of American history that are now so thoroughly standardized as to form perhaps the most substantial body of "common elements" in elementary education. It is clear from Dr. Horn's study that one apparently very important need is not being met by the history-program. How far the content of elementary history can or should be modified to meet this need is a question that cannot be answered off-hand. It may, for example, be urged that any cross-section of "contemporary problems" would be an untrustworthy guide in determining the character and content of an elementary course in history,—for "contemporary problems" are likely to be replaced by new and quite different problems long before the present school generation becomes the dominant generation of adults. In any case what is needed for the solution of this and most of the other troublesome problems of the curriculum is agreement upon the desirable outcomes of teaching, and an understand-

ing of the way in which the various subjects of the school program contribute or fail to contribute to these outcomes. The program of the Committee on Economy of Time for the coming year includes this as one of its chief problems. With a clearing up of the terminology, the results of investigations such as those reported by the present writer in the *Fourteenth Yearbook* and by Dr. Horn in the present volume will doubtless lend themselves to a much more helpful interpretation than is now possible.

CHAPTER X

POSSIBLE DEFECTS IN THE PRESENT CONTENT OF AMERICAN HISTORY AS TAUGHT IN THE SCHOOLS

ERNEST HORN
State University of Iowa

THE PROBLEM

The reasons given for teaching history in the elementary school are numerous and those who expound them are not always in agreement. It is not the purpose of this study to investigate the relative worth or even the existence of any value included or implied in the various aims. Its purpose is rather to examine into the implications of one assertion which has been much made of late, viz: that *the chief purpose of teaching history in the elementary school is to make pupils more intelligent with respect to the more crucial activities, conditions and problems of present-day life*. In other words, this study is planned to determine what the content of the course of study in history would be if all history which is not essential to such intelligence were eliminated and if items which are essential but which do not at present appear in the course of study were added. Naturally, it should throw light upon the relative emphasis to be given to each item.

The investigation has been undertaken with the hypothesis that if a representative list of the more crucial modern problems could be secured, and if, among the books dealing with each problem, those be selected which give the clearest statement of that problem, it might be expected that these books would contain at least the sort of history, or amount of historical reference which in the judgment of the authors is essential to a proper understanding of the modern problems they are discussing.

METHOD OF ATTACKING THE PROBLEM

The heads of the Departments of Political Science, and Sociology and Economics, of the State University of Iowa were asked to make out a list of problems of undoubted crucial nature in present-day life and to list under each the books which gave the most intelligent treatment. From among these books, after a consultation with the departments concerned, one was chosen for analysis. Books which were plainly historical in treatment were excluded.

There was no attempt on the part of the author to weight the data from the various books according to the size of the book or the importance of the problem treated. An historical reference is arbitrarily given the same weight in one book as in another. It would be an interesting problem to have the relative value of each book and problem but to obtain these data was beyond the province of this study.

The books were analyzed by students in the graduate classes in history in the State University of Iowa, according to directions prepared by the author in cooperation with Professor Plum of the Department of History.¹ The detailed directions will be available to anyone. It was planned to secure the following classes of data:

1. The percentage of historical material in each book.
2. The specific and approximate dates referred to in each book.
3. The historical characters referred to in each book.
4. The frequencies of reference to each period in history. The periods were chosen to correspond to those given in the bulletin by W. C. Bagley and H. O. Rugg,—*The Content of American History as Taught in the 7th and 8th Grades*.

5. The frequencies of reference to each of the more important phases of history. The outline used for scoring these data was taken from Langlois and Seignobos *Introduction to the Study of History*,

¹The author is indebted to the following students of the history department for cooperation in scoring books: Mr. Atwell Tally, Miss Nelle Baird, Miss Mina Utz, Miss Cora Speer, Miss Irene Stapleton, Miss Florence McInerney, Miss Mildred Coulter, Miss Mary Kinnavey, Miss Gail Humbert, Miss Bernice Kiser, Miss Clara Cook, Miss Ruth Southall, Miss Myrna Boyce, Miss Hymena Hoffman, Miss Clara Holden, Miss Luella Jones, Miss Florence Magowan, Miss Gail Stahl, Miss Lillian Oldaker, Mr. Frederic Meinzer, Mr. M. L. Hansen, Mr. Ralph Turner, Mr. F. W. Smith.

pages 234-235.) (For the convenience of the readers this outline is given herewith.)

I. Material Condition. (1) Study of the body: A. Anthropology (ethnology anatomy, and physiology, anomalies and pathological peculiarities. B. Demography (number, sex, age, births, deaths, diseases). (2) Study of the environment: A. Natural geographical environment (orographic configuration, climate, water, soil, flora, and fauna). B. Artificial environment (forestry cultivation, buildings, roads, implements, etc.)

II. Intellectual Habits (not obligatory). (1) Language (vocabulary, syntax, phonetics, semasiology). Handwriting. (2) Arts: A. Plastic arts (conditions of production, conceptions, methods, works). B. Arts of expression, music, dance, literature. (3) Sciences (conditions of production, methods, results). (4) Philosophy and morals (conceptions, precepts, actual practice). (5) Religion (beliefs, practices).

III. Material Customs (not obligatory). (1) Material life: A. Food (materials, modes of preparing, stimulants). B. Clothes and personal adornment. C. Dwellings and furniture. (2) Private life: A. Employment of time (toilet, care of the person, meals). B. Social ceremonies (funerals and marriages, festivals, etiquette). C. Amusements (modes of exercise and hunting, games and spectacles, social meetings, traveling).

IV. Economic Customs. (1) Production: A. Agriculture and stock-breeding. B. Exploitation of minerals. (2) Transformation, Transport and Industries: technical processes, division of labor, means of communication. (3) Commerce: exchange and sale, credit. (4) Distribution: system of property, transmission, contracts, profit sharing.

V. Social Institutions. (1) The family: A. Constitution, authority, condition of women and children. B. Economic organization, family property, succession. (2) Education and instruction (aim, methods, personnel). (3) Social classes (principle of division, rules regulating intercourse).

VI. Public Institutions (obligatory). (1) Political institutions A. Sovereign (personnel, procedure). B. Administration, services (war, justice, finance, etc.) C. Elected authorities, assemblies, electoral bodies (powers, procedure). (2) Ecclesiastical institutions (the same divisions). (3) International institutions: A. Diplomacy. B. War (usages of war and military arts). C. Private law and commerce.

This outline was chosen because it is well known to students of historical method. It was hoped that students would be able to score according to the detail in this outline. As a matter of fact, the outline was not at all satisfactory on account of the terminology and on account of the peculiar overlapping of certain items. Accordingly, the data on this sheet are scored under three heads—*social and economic*, which includes Items I, II, III, IV, and V; *political institutions*, which includes VI. (1), (2), (3), A and C; *military institutions*, which includes VI, B. It is the belief of the author that this grouping eliminates most of the variability which occurred in scoring on the more detailed sheet.

6. Movements, events, conditions, problems, etc. This was intended and as a matter of fact was used as a check on the material collected under 5. The problems so reported were scored by Professor Plum and the author on the blank taken from Langlois and Seignobos.

RELIABILITY OF THE METHOD

1. *As conditioned upon the selection of the books:* Below follows the list of the books analyzed. It was impossible to score all books on all kinds of data desired. In the discussion which follows the list of the books analyzed. It was impossible to score all

1. Adams, Henry Carter, *Science of Finance*, 573 p. N. Y. Holt.
2. Adams & Sumner. *Labor Problems*. 579 p. N. Y. Macmillan.
3. *Annals of Academy of Politic and Soc. Sciences*. American Academy of Pol. and Soc. Sciences. Woodland Ave. & 36th St., Phila.
4. Preparedness and Amer. Inter. Programs, 264 p. N. Y. Macmillan.
5. Brooks, John Graham. *American Syndicalism*, Vol. 66, 1916.
6. Clark, W. E. *Cost of Living*, 168 p. McClurg, 1915.
7. Dorr, Rheta C. *What Eight Million Women Want*, 330 p. Bost. Small.
8. Fairchild, Henry Pratt. *Immigration*, 455 p. N. Y. 1913, Macmillan.
9. Goddard, Henry Herbert. *Feeble-Mindedness*, 599 p. N. Y. Macmillan.
10. Goodnow, Frank Johnson. *Municipal Home Rule*, 283, p. N. Y. 1895, Macmillan.
11. Gillette, John Morris. *Constructive Rural Sociology*, 301 p. N. Y. 1913, Sturgis.
12. Godfrey, Hollis. *The Health of the City*. 372 p. Bost, 1910, Houghton.
13. Hobson, John A. *Problem of the Unemployed*. 163 p. Land. Methuen.
14. Jenks, Jeremiah W. *Trust Problem*, 281 p. N. Y. McClure.
15. Johnson, E. R. *Ocean Travel and Inland Water Transportation*, 335 p. N. Y. Appleton.
16. Johnson, Emory Richard. *Amer. Railway Transportation*, 434 p. Appleton, N. Y.
17. Mangold, George B. *Child Problems*, 381 p. N. Y. Macmillan.
18. Parmelee, Maurice R. *Poverty of Social Progress*, N. Y. Macmillan.
19. Patten, Simon N. *The Economic Basis of Protection*, 144 Lippincott.
20. Report of National Child Labor Com. V. 3 and 4.
21. Rubinow, Isaac Max. *Social Insurance*, 525 p. N. Y. 1913. Holt.
22. Seager, Henry R. *Social Insurance*, 175 p. N. Y. 1910, Macmillan.
23. Squiers, Lee Welling. *Old-Age Dependency in U. S.* 361 p. N. Y. 1912, Macmillan.
24. Sullivan, Jas. W. *Markets for the People*, 316 p. N. Y. Macmillan.
25. Spargo, John. *Common Sense of the Milk Question*, 351 p. N. Y. Macmillan.
26. Tawney, Richard H. *Studies in Minimum Wage*, 2 v. London, Bell Ratan Tata. Foundation.
27. Warner, Amos, G. *American Charities*, 510 p. N. Y. Crowell.

It would, of course, have been desirable to secure a wider selection of books but the labor of scoring was so great that it was impossible to ask a student to score more than one book. An effort was made to distribute the books analyzed as evenly as possible among the lists submitted by the different departments.

2. *As conditioned upon possible variations among scorers:* Whether or not different data would have been secured by different individuals depends upon the experience and training of the scorers. Graduate students in history were chosen purposely as being unlikely, because of their training, to miss important data. It seems improbable that errors should have been numerous in scoring dates or persons. Accurate scoring of periods and phases of history necessitated the use of judgment on the part of the scorer in each case and is more subject to variations due to differences in training, ability, etc.

3. *As conditioned upon the directions:* In general, the directions seem to have been understood, but in some cases, particularly in the portion dealing with phases of history, they were not entirely satisfactory. Perhaps additional practice in scoring by the directions would have made them clearer and so reduced the unreliability from this source. There was apparently little difficulty in the case of dates and persons. Some did not understand what data were to be scored on the blank provided for scoring periods. In the case of the outline from Langlois and Seignobos there was some variation in the way in which the several items were interpreted. As a matter of fact, the data on this blank are not reported in the study; there have been substituted the data collected under Point 6, and distributed on this blank by Professor Plum and the writer.

To supplement and reinforce the data found in the analysis of the books mentioned above, a graduate class in education² checked the historical material in articles in the *International Encyclopedia* under 38 topics, with cross references sufficient to make a total of 142 articles.

²This class consists of W. N. Anderson, Alice Camerer, Frances Dearborn, Libbie George, Mabel Green, Chester Gregory, T. B. Homan, Madeline Horn, J. L. McCrory, Mabel Paull, Elmer Ritter, J. A. Swisher, Estaline Wilson, Ralph Minard, Jane Howarth, Harley Hines.

The topics examined were as follows:

- | | |
|-----------------------------------|------------------------------------|
| 1. Accident insurance | 20. Labor |
| 2. Ballot | 21. Merchant marine |
| 3. Bank, Banking | 22. Monroe Doctrine |
| 4. Child labor | 23. Milk |
| 5. Crime | 24. Negro |
| 6. Civil-service reform | 25. Regulation of public utilities |
| 7. Conservation | 26. Pauperism |
| 8. Coast defense | 27. Philippines |
| 9. Democracy | 28. Prisons |
| 10. Divorce | 29. Pure food |
| 11. Education | 30. Roads |
| 12. Efficiency | 31. Rural credits |
| 13. Fire insurance | 32. Railways |
| 14. Family | 33. Socialism |
| 15. Feminism | 34. Tariff |
| 16. Hygiene | 35. Temperance |
| 17. Initiative, referendum, etc., | 36. Transportation |
| 18. Interstate commerce | 37. Tax |
| 19. Life insurance | 38. Woman's suffrage |

REFERENCES TO DATES

A portion of the investigation was planned to discover what dates are most frequently referred to in discussions of modern problems. One would expect to find the dates most useful for a discussion of a given problem in the books and articles dealing with that problem.

Books Scored for Dates

Adams, *Science of Finance*
 Adams & Sumner, *Labor Problems*
 Clarke, *Cost of Living*
 Dorr, *What Eight Million Women Want*
 Fairchild, *Immigration*
 Gillette, *Constructive Rural Sociology*
 Hobson, *Problem of Unemployed*
 Jenks, *Trust Problem*.
 Parmelee, *Poverty of Social Progress*
 Patten, *The Economic Basis of Protection*
Report of National Child Labor Com.
 Rubinow, *Social Insurance*
 Seager, *Social Insurance*

Encyclopedia Articles Scored for Dates

Accident Insurance
 Ballot
 Child Labor
 Civil Service
 Democracy
 Divorce
 Family
 Initiative, Referendum, etc.
 Interstate Commerce Com.
 Merchant Marine
 Monroe Doctrine
 Negro
 Prisons
 Railways
 Tariff
 Temperance

In the books 194 separate dates were found; in the *International* 199 different dates. In the two lists were 253 different dates, many of which occurred but once. The first thing to be noticed in the data is the great frequency of the census dates. The average frequency of occurrences of census dates is three times that of non-census dates. This is no doubt due to the fact that the data used in discussing public questions are drawn so largely from census reports. In Table 2 appear the census dates, along with the date in each decade, other than census dates, which was scored in connection with most problems.

TABLE 1

PERIOD	DATE	TIMES MENTIONED	DIFFERENT PROBLEMS
1890-1916	1913	27	10
	1910	38	14
1900-1909	1902	43	18
	1900	114	22
1890-1900	1893	52	16
	1890	84	20
1880-1890	1882	26	15
	1880	40	16
1870-1880	1871	22	14
	1870	53	21
1860-1870	1869	33	13
	1860	28	13
1850-1860	1857	14	10
	1850	56	15
1840-1850	1848	26	18
	1840	20	11
1830-1840	1833	11	10
	1830	52	8
1820-1830	1825	12	9
	1820	7	4
1810-1820	1819	7	6
	1810	3	3
1800-1810	1803	7	5
	1800	8	6
1790-1800	1794	4	4
	1790	8	8

It is interesting that, with the exception of the two census dates, 1820 and 1850, but one date, 1803, in the list secured from the American Historical Association and reported in the *Fourteenth Yearbook* in the article by Prof. Bagley, is to be found in this table. Dates commonly insisted upon in the study of history, such as 1492, 1607, 1765, 1812, April 14th, 1861, etc., are practically never cited in the books and articles scored above. For example, 1492 occurs but once in any of the books or articles; 1765 not at all; April 14th, 1861, not at all, etc.

REFERENCES TO PERIODS

Because of a misunderstanding in following the directions for scoring material by periods, only six books were correctly reported on this point, viz.: Fairchild, *Immigration*; Gillett, *Constructive Rural Sociology*; Rubinow, *Social Insurance*; Jenks, *The Trust Problem*; Dorr, *What Eight Million Women Want*; Clark, *Cost of Living*. All of the sixteen articles from the *International Encyclopedia* which were reported under dates were also reported under periods. Below follows the percentages of frequency of reference by periods, along with the percentage of space given to each period by the text-books of Class Four, as reported by Professor Bagley in the *Bulletin* already referred to.

TABLE 2

Period	PERCENTAGE OF REFERENCES TO EACH PERIOD		
	Books	International	Elementary Texts
Unclassified.....	....	3.7	.....
Discovery and Exploration... ..	0.1	0.67	8.27
Col. to 1764.....	2.5	2.0	19.62
1764-1793.....	3.8	3.5	13.69
1784-1812... ..	1.8	6.0	14.17
1812-1861.....	4.7	11.0	21.00
1861-1916.....	85.7	74.0	24.67

The percentages opposite the last period under the headings *Books* and *International*, seem very large, when we compare them with the space given to the period in present elementary textbooks. It seems clear that, in dealing with the modern problems listed above, the authors find it necessary to refer to the period since the beginning of the Civil War at least twice for every time they find it necessary to refer to all other periods combined. If the data be taken at face value, they would indicate a ratio, not of two to one but of three to one; and, in the case of books, of almost five to one.

It must be kept in mind, of course, that many of the problems, such as Social Insurance, Immigration, Trusts, Child Labor, Civil Service Reform, Initiative, Referendum, and Recall, have come to occupy the attention of the American people only in recent years.

Considering the conventional divisions of history into ancient, medieval, and modern history, it is interesting to note that 93 per cent of all references in the books and 92.1 per cent of all references in the *International* were to modern times. This percentage is divided, in the case of books, so that American history receives 67.3 per cent and modern history not American 25.7 per cent; in the case of the *International*, so that American history receives 52.7 per cent and modern history not American 39.4 per cent. Within the period of ancient times Rome receives almost twice as many mentions as Greece. The Middle Ages receive about the same as Rome. In modern history, other than American, the rank of the countries according to frequency of mention is as follows: England, Germany, France, Russia. One of the striking things is the frequency of reference to the smaller countries, like Denmark, Norway, Sweden, Holland, Belgium, and New Zealand. New Zealand, for example, is mentioned more frequently than Spain. The high frequency of reference to certain small countries is accounted for, of course, by the fact that they have been attempting the solution of many of the very problems which now confront the American people.

REFERENCES TO PERSONS

The purpose of this portion of the study is to discover what persons are most frequently referred to, in discussions of modern problems. The 27 books and the 38 encyclopedia articles first listed were scored for persons. After the scoring was done it became apparent that the instructions which allowed for one point per paragraph occurrence were at fault, since this allowed a number of mentions in successive paragraphs to offset scattered mentions which were really of greater significance. For example, Aguinaldo received in successive paragraphs a total of seven mentions, in connection with a single problem, the Philippines, which would have given him a rank beyond his real importance. In order properly to describe the data there are given below four organizations: (1) the product of the number of mentions and the number of separate problems in the books—Table 3; (2) the products of the number of mentions and the number of separate problems in

the encyclopedia articles—Table 4; (3) the sum of these products—Table 5; (4) the rank according to the total number of problems in both encyclopedia articles and books—Table 6. In many ways the last organization seems to be the most adequate measure of the real importance of individuals, since, if an individual has been of great significance, it might be expected that this influence would be widely felt.

TABLE 3
REFERENCES TO PERSONS IN 27 BOOKS
(Rank at left and product of mentions and problems at right.)

1. Roosevelt	242	13. Bismarck	36
2. Smith, Adam	192	14. Goler, Geo.	36
3. Mill, J. S.	136	15. McCulloch	33
4. Adams, Prof.	84	16. Chapin, C.	30
5. George, Lloyd	80	17. Ricardo	30
6. Malthus	72	18. Brandeis	27
7. Cohn	60	19. Marx	27
8. Napoleon	48	20. Franklin, Benj.	26
9. Booth, Chas.	42	21. Beveridge	26
10. Carnegie	40	22. Hoffman	25
11. Gompers	40	23. George, Henry	21
12. Bastable	40	24. Wilson, Woodrow	21

TABLE 4
REFERENCES TO PERSONS IN ENCYCLOPEDIA ARTICLES
(Rank is at left and products of mentions and Problems at right.)

1. Roosevelt	42	14. Aristotle	12
2. Marx, Karl	32	15. Franklin, Benj.	12
3. Mill, J. S.	28	16. Lassalle	10
4. Rousseau	25	17. Balkumin	10
5. Louis XIV	25	18. Washington	9
6. Owen, Robert	24	19. William III	9
7. Smith, Adam	18	20. Wilson	9
8. Napoleon	16	21. Charlemagne	9
9. Jefferson, Thos.	15	22. Fourier	9
10. Edward I	15	23. Francis I	9
11. Plato	15	24. Grant, U. S.	9
12. Pitt, William	12	25. Jackson, Andrew	9
13. Augustus Caesar	12		

TABLE 5
REFERENCES TO PERSONS IN BOOKS AND ENCYCLOPEDIA ARTICLES COMBINED

1. Roosevelt	284	16. Grant, U. S.	18
2. Smith, Adam	214	17. Pitt, Wm.	16
3. Mill, J. S.	174	18. Wells, H. G.	16
4. Malthus	74	19. Gladstone	16
5. Napoleon	64	20. Wagner, A.	15
6. Marx, Karl	59	21. Webb	14
7. Owen, Robert	44	22. Lassalle	14
8. Gompers	41	23. Napoleon III.	12
9. Ricardo	38	24. William III,	10
10. Wilson	30	25. Gallatin	10
11. Washington	29	26. Jackson, Andrew	10
12. Louis XIV.	29	27. Montaine	10
13. Rousseau	26	28. Hamilton, Alexander	9
14. George, Henry	25	29. Wright, C. D.	9
15. Jefferson, Thos.	24	30. Shaw, Bernard	6

TABLE 6

REFERENCES TO PERSONS IN BOOKS AND ENCYCLOPEDIA ARTICLES
(Rank at left and number of different problems at right.)

<i>Individuals Not Now Living.</i>	<i>Individuals Now Living</i>		
1. Mill, J. S.	12	1. Roosevelt	17
2. Napoleon	10	2. Wilson, W.	6
3. Smith, Adam	8	3. Gompers	5
4. Louis XIV.	7	4. Wells, H. G.	4
5. Washington	7	5. William III.	4
6. Malthus	7		
7. Rousseau	6		
8. Jefferson	6		
9. Owen, Robert	6		
10. Grant, U. S.	6		
11. Franklin, Benjamin	5		
12. Fourier	5		
13. George, Henry	5		
14. Ricardo	5		
15. Aristotle	4		
16. Clay, Henry	4		
17. Cleveland, Grover	4		
18. Elizabeth, Queen	4		
19. Gallatin, A.	4		
20. Gladstone	4		
21. Jackson, Andrew	4		
22. Marx, Karl	4		
23. Montaigne	4		
24. Napoleon III.	4		

Nearly 1600 different individuals were mentioned, most of them but once. Two hundred sixty-one occurred either in both books and articles; or in one or the other with a score (using the product of the mentions and different problems) of six. The divergence between this list and that reported by Professor Bagley from modern textbooks is very striking. Fewer than ten per cent of the names reported as occurring most frequently in modern textbooks occur in the first 261 names taken from books on modern problems and from the *Encyclopedia*. In fact, most of the names secured from modern textbooks were not reported by anybody either in the analysis of the book or the analysis of the *Encyclopedia* articles.

It is obvious from the variations which occur in the various tables that the data at hand do not give a complete and final report of what would be found if a greater number of books and articles had been analyzed. As the data were tabulated, there was a progressive elimination of individuals who, in the opinion of the authors, apparently have had a minor part, in shaping modern affairs. It seems unlikely that any individual appearing in the first

24 names reported in Table 3, would be moved beyond the limits of the first fifty names. It seems unlikely also that any name not now appearing in the first 100 names would displace any individual in this list.

It must be kept in mind that this list does not pretend to be a measure of the greatness of individuals. It is merely an indication that the individuals reported have to be reckoned with in considering modern problems. Their influence may have been to accelerate or retard the solution of these problems.

It will be noticed that when individuals now living are included the frequency of mention and number of problems for those names is very high. For example, should Roosevelt receive seventeen points while Napoleon receives but ten? No doubt, individuals living in the last quarter century receive a number of points which is larger in comparison with those men who lived in the 18th century than would be given by a similar investigation two hundred years from now. Nevertheless, if one keeps in mind that the authors are presumably concerned with those names which have to be reckoned with today, it may be that recent names have not received much over-emphasis. For example, Aaron Burr had to be reckoned with one hundred years ago: he was not reported in any connection, while Gompers was reported in connection with five different problems. Gompers is decidedly more important to an understanding of modern issues than is Aaron Burr.

Again, it will be noticed that the group including philosophers, economists and sociologists occurs more frequently than any other group. It is possible that this is in part due to the fact that authors of modern books tend to cite writers of earlier books on the same subject rather than to cite individuals who were active in administering the solution of the problems. On the other hand, a brief survey of such evaluations of the men as are found in the encyclopedias, indicated that the influence of these authors was not by any means confined to colleges and universities. It is significant, too, that the individuals who were mentioned as rulers, were included not because of military achievement but rather because of influence exerted on civil affairs. It is significant, for example, that Andrew Jackson should be included while Zachary Taylor is

left out, or that Jefferson should be included while John Adams is left out, or that Napoleon should come within the first five while Wellington did not receive a single reference. When individuals are classified by nationality, England ranks first with 6 men; America second with 5; France third with 4. It is interesting to note that but one individual from Germany is mentioned within the first 24 names. In point of time the individuals are relatively modern; only one died before the last quarter of the 18th century.

It seems unlikely that in general there has been much error in reporting. In a few cases it was no doubt difficult to tell whether individuals, particularly those now living, were reported really as historical characters or as standing for some issue as a representative of present times. There was occasionally some difficulty in identifying names, when the first name was not given. For example, in case of Pitt and Peel it was very difficult to tell which of two or three individuals was referred to. The same was true of Adams. Even in some cases where more data were given as in the case of William III it was not clear whether some of the scores given to William III of Germany might not really have belonged to William III of England. In a few cases, such as of King and Peel, the difficulties were so great that the author thought it best to eliminate those names from the final reports. It was not anticipated that so much difficulty would be found at the time of making the directions or this confusion could have been provided against.

REFERENCES TO PHASES OF HISTORY

This portion of the investigation was planned to discover what phases of history were most frequently referred to in the discussions of modern problems. All the encyclopedia articles scored under dates were also scored for phases of history, and the following books likewise:

Fairchild. *Immigration.*
 Hobson. *Problem of the Unemployed.*
 Dorr. *What Eight Million Women Want.*
 Clark. *Cost of Living.*
 Rubinow. *Social Insurance.*
 Jenks. *The Trust Problem.*
 Johnson. *American Railway Transportation.*
 Thompson. *Protection of Home Industry.*

Report of National Child Labor Committee.

Vol. III. Child Labor and the Republic.

Vol. IV. Child Labor and Social Progress.

Adams & Sumner. *Labor Problems.*

Patten. *Economic Basis of Protection.*

Adams. *Science of Finance.*

Goodnow. *Municipal Home Rule.*

As explained earlier in the article, so much difficulty was found in following directions that it seemed wise to make a simpler grouping, so that in the table below all data are reported under three headings, political, military, and social and economic. The writer made a rough grouping of the material in the course of study as outlined by the Committee on Eight, and of the material outlined in the report upon modern textbooks. The distribution of percentages among these three headings for the course of study of the Committee of Eight and for the modern textbooks may not be very reliable. It is impossible to classify some items satisfactorily, because of the meager details. The reader is invited to compare the findings of this investigation with these two studies himself.

TABLE 7

DISTRIBUTION OF REFERENCES TO THREE PHASES OF HISTORY (IN PER CENTS)

	Political	Military	Social and Economic
Committee of Eight.....	33	30.	37
Modern History Text Books.....	42	40.	18
Books on Modern Problems.....	13.7	4.7	73
Encyclopedia Articles.....	37	1.7	60

The noticeable difference is the high proportion of space given in the encyclopedias and in books on present-day problems to social and economic phases of history as compared to the space given to military history. Political history seems to receive in treatment of modern problems an amount somewhat proportionate to that given it in courses of study and in modern textbooks on history. An analysis of the problems in connection with which the political history is discussed shows that the political is subordinated to the solution of social and economic problems. For the most part such references deal with social legislation and with the action of the courts upon that legislation. Until very recently, the executive and political history has received a relatively small amount of mention.

The data reported under this heading are more meager than under any other heading and of course cannot be taken as conclusive. It is noticeable, however, that there is little variation among the data as to the proportional amounts to be given to these three

phases of history, and that the general emphasis upon the social and economic phases is in harmony with the data scored under dates, periods and persons.

GENERAL DISCUSSION OF THE DATA

1. As has been pointed out frequently under the various items, it would be interesting to have a larger number of books, say 100, and a larger number of articles from encyclopedias, say 500. The returns from the books and encyclopedia articles are, however, so consistent that it seems unlikely that the data of this study would be modified except in minor items or that there would be much change in the sort of historic allusions that would be found.

2. Attention should again be called to the fact that the problems selected are not all of equal importance nor the books of equal length. In the case of the articles in the *Encyclopedia*, differences in value of the problems would be significant, but the difference in length of articles would not affect the results, since the content of these articles was scored by paragraphs.

3. While all investigators were given a preliminary discussion and practice before undertaking the work of scoring, it seems probable that a longer period of practice would somewhat have increased the accuracy with which the material was scored. The writer believes that the report upon dates and upon persons represents a very close approximation to the material actually in the books and articles under these headings. With the reconstruction of the material bearing on "periods" and "phases" of history, it is the opinion of the writer that the variation from a true description of the data is not more than 5 or 10 per cent.

4. It would probably have been worth while to take two books under each problem, so that one book could have been used as a check against the other. However, the articles covering the same problems in the *International Encyclopedia* supplied this check to a considerable degree.

5. The problems listed for analysis are certainly crucial. It may seem to the reader that the list shows overemphasis of industrial and social problems. Problems which have to do with the

proper employment of the leisure period received only incidental mention. It seems to the writer, however, that in the combined lists are to be found most of the problems commonly referred to as our "modern problems."

6. It is possible, of course, that scientific achievements or inventions, which have been the basis of changing conditions or have given rise to problems or have facilitated the solution of problems, should have been included by the authors of books and articles to a greater extent than found. It must be kept in mind that in this study only such data as were explicit in the text were scored. As a matter of fact, such men as Watt, Darwin, and Edison, do receive more emphasis than is ordinarily accorded to them in present-day textbooks and courses of study.

EDUCATIONAL IMPLICATIONS

1. This investigation has not attempted to answer the question as to the complete content of the course of study in history. Neither does it assert that the purpose of history is to throw light on modern social problems, or that this is even one of the chief purposes of studying history. Without regard to what the aims of teaching history are, this investigation has been carried on to examine into the implications of one particular assertion: namely, that history should render pupils more intelligent with regard to modern conditions, problems and activities. If one assumes (1) that this is the function of history, (2) that the method of research here followed is satisfactory, and (3) that sufficient data have been collected, then there seems no escape from the conclusion that the present elementary and high-school courses of study in history are in very serious need of reconstruction.

It is obvious, however, that there are other functions of history, significant enough to deserve separate investigation. From a rough preliminary study made from library withdrawals and the study of publishers' markets it has seemed probable to the writer that the most frequent use which is made of history is to enhance and enrich periods of leisure. On the other hand, there is much to be said in behalf of the argument that the crucial nature of modern

social and economic problems warrants giving to these aspects of history a very much stronger, if not the chief, emphasis.

2. The data suggest the emphasis that should be given to the various items in the course of study in so far as the one function examined goes. They do not indicate what the organization of the course should be. Some have urged that the proper method of organizing history is to take the various problems, one after another, until all have been completed. The writer does not believe that there is anything in the present data which would point to this conclusion. One can just as readily assume that history should be taught by periods and insist that in each period such history as is essential for the interpretation of modern problems should be taught. Such a plan excludes useless material rigorously and has the advantage of giving each problem in its historical setting. It seems possible that the play of the problems on each other constitutes data as significant for throwing light on present-day life as the data in connection with the individual problems themselves.

3. Preliminary experiments seem to show that the real spirit and interest in history cannot be secured so readily where the organization is by isolated problems.

CHAPTER XI
MINIMAL ESSENTIALS OF PHYSICAL EDUCATION
AND
A SCALE FOR MEASURING RESULTS OF PHYSICAL
EDUCATION

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INTRODUCTORY

With the assistance of committees from the American Physical Education Association, the American School Hygiene Association, the Child Hygiene section of the N.E.A., the New Jersey Association of School Medical Inspectors and Nurses, and a number of individuals who are specialists in some field of physical education, I have prepared a lengthy, though incomplete and tentative formulation along lines suggested by the title of this section of the report. Here I offer for criticism, however, only an outline of that study in brief form. The more extended formulation will probably be printed elsewhere and sent to each member of this organization.

I have found: (1) that with regard to aims, administration, subject matter, methods, and results there is probably more variability in physical education than in any other subject of the school curriculum; (2) that there is probably no objective means available for determining minimal essentials in this field, similar to the method of Dr. Ayres in analyzing correspondence to discover minimal essentials in spelling; (3) that we can bring together, however, certain tentative essentials by methods of analysis, consensus, expert opinion, and practical common-sense experience, such as have been used by our national committees on various phases of the curriculum; and (4) that we cannot discover minimal

essentials in this field until we construct and standardize a fairly satisfactory scale for measuring the results of physical education, such as health, normal growth, several types of physical ability, and bodily development. This report, therefore, will be devoted to a consideration of (I) the problem of determining minimal essentials of physical education, (II) an empirical statement of certain minimal essentials in this field, and (III) the construction of a tentative scale for measuring some of the results of physical education.

I. THE PROBLEM OF DETERMINING MINIMAL ESSENTIALS OF PHYSICAL EDUCATION

The nature and aim of physical education are determined (1) by the nature of children, (2) by the nature of society, and (3) by the nature of the school as a free, compulsory, universal, supplemental, and highly specialized institution.

(1) From several misconceptions of *the nature of children* inherited from the Middle Ages, physical educators are now trying to free themselves.

(a) They are getting away from the old *dualistic separation of mind and body* in which one phase of education, or schooling, is supposed to take care of merely physical, and another of merely mental development. They are entering into a more functional, pragmatic, psychophysical view of education in which mental activity normally takes place in connection with physical activity and the two are a unified whole as in purposive play and work. The present philosophy and science of education demands a type of education and, if possible, a schooling which provides growth toward psychophysical social efficiency as an outgrowth of activities having their own end. That is, the normal estate of learning is that in which growth in social knowledge, habits, and aspirations, as well as in health, grace, and physical development are largely by-products of various purposive activities of children along lines of instinctive tendencies principally of play and psychophysical work. As a result of an extensive questionnaire, I conclude that physical directors are now somewhat opposed to regarding and

counting gardening, manual training, home chores, and various types of healthful work as "physical education." The tendency however, will be in this direction. "School credit for home work will naturally include healthful physical work and play, and even the walks to school, as physical education. The ideal is to make unnecessary any motor activities of the school or home that have merely health and physical development as their aims.

(b) Physical educationists are also freeing themselves somewhat from extreme confidence in *formal discipline*, or spread of training. The aims of physical training are frequently, if not usually stated as order, obedience, determination, exactness, self-control, precision, etc., as if the development of skill along these lines for certain forms of physical training, such as "setting-up exercises" would make these specific habits of a specific environment, general habits of life, and as if the person who is precise and thorough in his physical gymnastics will be precise and thorough in everything that he does. This theory, which is probably more than half false, is responsible for the great confidence in formal physical-training exercises of a highly artificial type and for a disinclination in some quarters to promote more purposive, self-directed activities, such as play, excursions, boy scouting, manual training, gardening, and home chores of healthful types. The purposive work and play of boys and girls on the farm, however, is nearer ideal from the modern, psychophysical theory and the theory of specific-stimulus-coupled-with specific-response-in-the-life-environment than any system yet devised in which highly artificial exercises are performed somewhat as a medicine for artificial life conditions. Even the basis for military efficiency, we are learning, is probably best laid in normal, healthful physico-mental work and play. In what ways *general* discipline can be promoted through physical education is a problem of the future.

(2) *The nature of society* entails for about half our population, highly artificial and unnatural, largely sedentary, indoor, nervous work. Children must be prepared to cope with such an environment. Artificial exercises must be resorted to in adult life by many persons who should probably have been trained in them at school. However, on the whole, it is probably true that the more

artificial the adult life-to-be of children, the more normal and health-promoting should be their school life.

(3) *The school* in most places, especially in cities, is a highly artificial institution, largely ignoring physical needs and probably contributing rather to ill health and physical deterioration than to vital efficiency. Educational theory today is opposed to the narrow-ribbon type of yard about the school building, the sedentary, bookish life, the seats screwed to the floor and absence of play or gymnastic rooms, and to the poor lighting, ventilation, and sanitation that prevail. But such school equipment, purchased and constructed on older theories of education, will long resist the modern tendencies exemplified by schools like those of Gary, Tuskegee, Interlaaken, and others. Psychophysical education must be carried on, however, and must be given special stress because of the lack of such education outside the school. With forty pupils in a classroom with seats screwed to the floor and little or no place to do physical work or play, the provision of motor activities must be of the nature of an antidote to, and a correction of the injury done by a "lop-sided schooling." Physical educators who wish most to make their work normal find that they must devise or select exercises largely of an unnatural, formal character. But such exercises are probably no more formal and unnatural in the typical school environment than the spelling of long lists of words from a spelling book or the drilling in formal grammar. It seems that the nature of the present school drives us into certain regrettable modifications of an ideal scheme of physical education.

Physical education is also determined by the *general aims of education*. Every part of education must contribute to the general aim. The general aim of education is social efficiency. Individual and social happiness, life more abundant, life as a fine art, self-realization, growth, and community, national, and international peace and progress, may be regarded as emphasizing but different aspects of the same goal—making the process of living itself more reasonable, desirable, and effective.

An analysis of the general aim of social efficiency reveals five principal factors, or sub-aims, which help us to come nearer to detailed school aims and standards. Each of these must be analyzed

into its thousands of specific aims. These five great aims may be stated as:

1. *Vital Efficiency*: health, physical development, freedom from correctible physical defects, grace and agility, motor control of various kinds, and general physical fitness.
2. *Vocational Efficiency*: industrial, agricultural, commercial, domestic and professional ability for varying groups and a general basis for all.
3. *Avocational Efficiency*: right use of leisure, living as a fine art, wholesome enjoyment and recreation, esthetic appreciation, and private and public avocations.
4. *Civic Efficiency*: citizenship in the community, state, nation, and world at large.
5. *Moral Efficiency*: ethical insight, skill, and responsiveness.

Present-day education is concerning itself seriously with providing changes in knowledge, habits, and aspirations correlated with physical changes of various kinds that are specifically and plainly related to these dominant aims so readily accepted but so largely neglected in the schools. It is interested in finding the school's function and possible usefulness as a supplemental institution dedicated to the general social welfare rather than in maintaining ancient traditions and superstitions. It finds that the preventable deaths each year reach close to three-fourths of a million persons, that about two-thirds of the school children are physically defective, that a hundred thousand of its own pupils die each year, three-fourths of them from preventable diseases. It sees further the need of coupling general military preparedness with general social preparedness at this time when the nation is more ready than formerly to make schools more wholesome and psychophysically educative.

When we compare what our schools are doing for physical education with the splendid provisions for physical efficiency on the part of the ancient Greeks or with what is being done by certain progressive schools the world over, we must admit that we are probably far from helping our people to meet this prime problem of living—health and the attainment of general vital efficiency directed toward social amelioration.

The instruments which the school has at hand for promoting vital or physical efficiency, looked upon somewhat dualistically and omitting many indirect activities such as gardening perhaps, are also five in number, namely :

1. *Medical Supervision*: all-round examination, inspection, treatment, prevention, and cure of the ailments and defects of children both physical and mental.
2. *School Sanitation*: providing in all ways a healthful environment for children at school and elsewhere.
3. *Physical Education*: promoting all the general factors of social efficiency through motor activities of various kinds.
4. *Teaching Hygiene*: developing knowledge, habits, ideals, and appreciations in the direction of vital efficiency.
5. *Hygienic Methods*: guiding and directing children in such ways as to promote rather than injure wholesome, healthy, happy living.

Any attempt to derive the minimal essentials of physical education must at every point consider all the aims of education, all the instruments for meeting them, and the three factors of the nature of the children, of present-day society, and of the schools. Physical education can thus be seen to be closely related to the attainment of vital efficiency, to avocational efficiency (play and recreation), to vocational efficiency, to civic, and to moral efficiency. Its aim cannot be limited to the first aim alone, although for certain purposes it may for a time be so considered. Co-operation through group games and athletics, with efforts to carry out the ideals and practices into our democratic life, may be as largely contributory to civic efficiency, for example, as the teaching of citizenship in the school. Physical education has a large and growing opportunity and responsibility in providing wholesome recreation and harmless enjoyment for our youth who, both as children and later as adults, come to harm and misguided ways because of a lack of recreational employment and training. Moral aims, civic aims, and recreational aims go together here. The eight-hour day of labor leaves more time for recreation, while efficiency in the eight hours of labor necessitates physical efficiency such as has never

before been demanded of a people. We have a great need for a broad psychophysical education, and the foregoing principles must determine our selections of minimal essentials.

With these standards before us, *the types of psychophysical education* which can be differentiated within our school limitations are about as follows:

1. Free and supervised play, including dancing
2. Free and supervised athletics
3. Boy Scouts', Camp Fire Girls' and other similar activities
4. Wholesome motor activity in connection with school and other work activities of many kinds
5. Handicrafts and other similar physical avocations
6. Formal physical training, or gymnastics in the narrow sense
7. Orthopedic, therapeutic, or medical gymnastics
8. School excursions, tramps, and hikes
9. School dramatics, posturing, etc.

Some specific aims of such work in schools are:

1. To promote health, bodily resistance, and physical endurance
2. To promote alert, accurate, and graceful movements in pupils
3. To promote good posture in and out of school
4. To promote recreation that can be carried out into "life"
5. To promote good mental work in the school
6. To promote, through practice, knowledge, habits, and aspirations more or less directly related to vital and avocational efficiency and, if possible, to the other great aims
7. To attract adults to the schools and promote community ideals and practice of physical education

With these statements of aim before us, standards for determining more explicitly the minimal essentials of physical education and for judging efficiency in the instruction in this field might be made along the lines of such standards in other fields. We do not, however, include them here because they reiterate largely what has been said above in other terms.

We now have before us the problem: with all the conditions just described, the aims, and the instruments at hand, what are the essentials, and what are the minimal essentials of physical education?

II. TENTATIVE FORMULATION OF MINIMAL ESSENTIALS OF PHYSICAL EDUCATION

We offer below for criticism certain essentials of physical education which we regard as minimal in the elementary schools of the usual type in this country. They are divided into two groups: certain physical conditions necessary for the minima of physical education, and the minima themselves.

First Group. Physical Conditions Essential to the Minima of Physical Education.

A. *The Playground and Community-Recreation Center.* A minimal essential for every elementary school is sufficient outdoor space for the various forms of physical education. We endorse the minimum set by the National Playground Association: "For every elementary school of less than 100 children a play space of *ten thousand square feet* exclusive of school buildings. For elementary schools of 100 children there should be added 4,000 square feet and 4,000 square feet per each additional 100 children or fraction thereof. Thus, for a school of 200 children we should have, as a minimum, a school yard of 18,000 square feet, or a plot, say, 100 by 180 feet. This is a minimal standard and is not adequate for such games as regulation baseball and football, but with skillful administration and rotation of groups it would serve well the needs of elementary schools. But where the school with its playground is to serve as a social and recreation center for the neighborhood, it cannot adequately meet the needs of the community with less than *four acres*, while from six to twelve acres are desirable according to the population. Four acres is the very minimum, and is necessary in order to meet the problems of 'composition,' track and field sports, football and baseball, the divisions of playground, etc.¹"

B. *Apparatus and Equipment.* We believe, further, that certain types of apparatus and equipment for physical education are among the minimal essentials. Recommended:

¹Johnson in Rapeer's "*Educational Hygiene*" (Scribners), pages 404-5.

1. For Schools of Two or More Rooms:
 - a. Two horizontal bars about four and five feet, respectively, above the ground, with a pit beneath filled with sand
 - b. A jumping pit about four feet wide, twelve feet long, and six to eight inches deep filled with sand
 - c. Two playground balls and bats
 - d. One large and one small basket ball
 - e. One slide
 - f. One long jumping rope and ten short jumping ropes
 - g. One sand bin, about six by eight feet, or larger
2. Desirable in Addition:
 - a. One giant stride
 - b. Another long jumping rope and more short ones (50 for 200 pupils)
 - c. One balance beam
 - d. One pair of jumping standards
 - e. Five low hurdles
 - f. One more large and another small basket ball (200 pupils)
 - g. Four more playground balls (200 pupils)
 - h. Two volley-ball posts, ball, and net
 - i. Straightaway running track, 60 yards in length if possible
 - j. A climbing spar, or pole, about 6 to 8 inches through, and fifteen to twenty feet high, set solidly in the ground
 - k. Combination apparatus with rings, ladder, etc.
 - l. Basket-ball court and goals
 - m. Wading pool and swimming pool
3. For Large Schools with more than 200 Pupils:

More apparatus of certain types should be provided
4. For the One-room School:
 - a. One indoor baseball and bat
 - b. One low horizontal bar
 - c. One volley ball, two posts, and net
 - d. Two tennis racquets, two balls, two posts, one net
 - e. Six croquet mallets, balls, and wickets
 - f. One tether ball and pole²

²(For descriptions of rural-school apparatus see Curtis' "*Play and Recreation for the Open Country*," (Ginn), and Curtis, "*The Practical Conduct of Play*," (Macmillan), see also Dr. John Brown's "*Outdoor Athletic Test for Boys*" (especially designed for rural schools), Association Press, New York.

C. We believe that the natural center for a community park and recreation center is the public school building.

D. We believe that every school should have a playroom or gymnasium, or both. In rural single-room schools and many others, this room will frequently have to be in the basement. Such rooms should be well lighted and dry, and should make possible practically open-air school conditions; such rooms to be used, however, only when pupils cannot go out of doors.

E. We believe that movable school desks and seats in class rooms are minimal essentials for the best use of such rooms for physical as well as mental education.

F. The minimal essentials of *apparatus for an indoor gymnasium* to be used by both boys and girls are:

- a. Two horizontal ladders, adjustable as to height
- b. Six pairs of swinging rings, adjustable as to height
- c. One giant stride
- d. Balls, bats, etc., like the out-of-door equipment
- e. Twelve stall bars
- f. Facilities for jumping
- g. Basket-ball equipment

G. We believe that all school buildings should be made as sanitary in the way of lighting, heating, ventilation, toilet facilities, etc., as modern science recommends. This includes just now readjustment to our recent discoveries of the causes of poor ventilation and of the short length of time disease microbes live outside of a liquid medium, usually of the body. Greater vigor in this direction is essential.

H. We believe that at least two recesses of not less than fifteen minutes each on every ordinary school day are essential.

I. We believe that the organization of the elementary school on the basis of six years is probably somewhat better for purposes of physical education than as at present on the basis of eight years. Preadolescent children together are a relatively homogenous group. Adolescent children should be with their kind in the junior or senior high school. An exception is made of schools, like the Emerson and Froebel at Gary, where there are a number of exceptional features.

J. *Administrative Minimal Essentials:*

1. One efficient, professional supervisor of educational hygiene, including physical education, for each city of 1,000 school children and one for each county, who shall plan the work, supervise it, and be responsible for its success.
2. One efficient, professional assistant supervisor for at least every 8,000 pupils, who shall be health supervisor and teacher of physical education, assisting the teachers during and after school and supervising the school nurses.
3. One school nurse for each 2,500 pupils.

Second Group. Minimal Essentials of Physical Education.**A. The following types of physical education or "training" are considered essential and minimal:**

1. Free play in classroom, playroom, or gymnasium, and playground.
2. A Boy Scout's organization and Camp-Fire-Girl or girl scout's organization at practically every elementary school which includes more than four pupils of each sex above the age of nine.
3. Inter-recitation recreation, relaxation, breathing, posture, and light calisthenic exercises at least once each hour, not less than two minutes in duration, not counting recesses or dismissals, but counting fire-drills; less important when non-sedentary activities have been carried on, such as manual training, gardening, domestic science, etc.
4. Physical-training exercises of a more formal character: for the ordinary school not less than ten minutes a day. Longer periods desirable where there are gymnasia, probably at least one hour a day.
 - a. Good posture in standing, walking and marching
 - b. Vigorous trunk exercises combined with simple arm and leg movements
 - c. Rhythmic steps of medium difficulty executed with good form
 - d. Simple exercises on two pieces of gymnasium apparatus
 - e. Age-aims as indicated on Mr. Stecher's chart on page 191.

5. Folk and gymnastic dancing, rhythmic games, at least ten minutes a week.
 6. Walking, "tramps," and excursions, by groups, classes, sexes, or school. At least three of not less than a half-mile each half-year for all children able to walk.
 7. Gardening, caring for animals, home chores, manual and other physical work. Certain school credit to be given for outside physical activities of a desirable character. School recognition also for attainment of certain physical standards such as freedom from correctible physical defects and preventable ailments, for meeting or surpassing the standard tests, and for grace, posture, and physical fortitude.
 8. Public-school athletics. (See later standards.)
- B. Games for all pupils: (Games marked (R) can be played in the schoolroom. For description see Stecher, *Games and Dances*, Philadelphia.)

GRADE I

Cat and Mouse,	<i>Ball Games</i>
Running Races (over short distances),	Bean Bags, (R)
Hand Tag, (R)	(a) Toss Up and Catch,
Squat Tag, (R)	(b) Toss to a partner,
Skip Tag, (R)	(c) Combine a and b,
Follow the Leader, (R)	(d) Teachers' ball
Long Jumping Rope, (R)	Bound Ball, (R)

GRADE II

All of the games of Grade I may be played

Cat and Mouse, in two concentric circles,	<i>Ball Games</i>
Cat and Mouse, with two cats,	Increase the difficulty of the games of
Change Tag,	Grade I by greater distances; by
Catch Me,	designating the hand that tosses or
Spin the Plate, or Catch the Wand, (R)	catches; also by hand clapping once
Jacob, Where Are You? (R)	(or oftener) before a bag is caught.
Long Jumping Rope, (R)	Toss the bag for height,
Jump Over the Seats, (R)	Toss through a Bagboard, (R)
	Bag in the Ring, (R)
	Dodgeball, with one foot in a circle
	(R)

GRADE III

All the games of Grades I and II may be played

Potato Race, planting and picking,
Running and Hopping Races,
Third Tag and Run,
Pussy Wants a Corner,
The Beetle is Out,
Fox and Chickens,
Pass the Bean Bag. (Bag Relay)

Ball Games

Play the ball games of the preceding grades with a large gas ball, an indoor base ball, or a basket ball.
Duckstone (with bean bags), (R)
Guess Who? (R)

GRADE IV

The games of Grade III may be played

Day or Night,
Black Man,
Break Through (Bear in the Ring),
Lame Goose,
Catch the Wand (or Spin the Plate),
(R)
Girls: Jumping Rope,
Boys: Leap Frog,
Foot in the Ring,
Wrestle for the Wand.

Ball Games

Play the ball games of Grade III with a small soft rubber ball or a tennis ball,
Throw for height and distance,
Toss up (name the catcher),
End ball.

GRADE V

The new games of Grade IV may be played

Relay Race,
Three Deep,
Poison,
Jumping Circle,
Girls: Jumping Rope,
Grace Hoops,
Rubber Quoits,
Boys: Rooster Fight,
Quoits.

Ball Games

Girls and Boys: Bat ball with a volley ball or a light basket ball,
Corner ball.

GRADE VI

Rabbits, two hunters on a line,
Relay Race,
Three Deep,
Catch the Robber,
Poison.

Ball Games

Bat ball (with a basket ball),
Bat over a rope (with a volley ball),
Pass ball, in a circle.

GRADES VII AND VIII

Rabbits, one hunter on a line,
Relay Race,
Three Deep,
Prisoner's Base.

Ball Games

Base ball,
Captain ball,
Volley ball,
Battle ball,
Socker football.

C. Certain minimal standards in school athletics. These will be taken up in Part III.

III. A MEASURING SCALE FOR PHYSICAL EDUCATION

In order satisfactorily to determine minimal essentials of physical education we must invent and standardize some kind of a measuring rod for progress made in the direction of our aims. Since our aims are manifold and since no single measure seems to correlate sufficiently well with what we consider all the results of physical education should be, it seems our first problem is to avoid the error of those who have tried to make a single measuring scale for manifold products in other fields only to find analytic ones necessary, and to try to devise a fairly all-around set of measures and to get them standardized by much use in many schools with many children. The writer has been very agreeably surprised at the large amount of work that has been done along these lines in the field of physical education. Physical educators have for some time been working in the right direction and the outlook in this field, second to none in importance, is very bright.

I have collected some thirty different types of physical-efficiency measures. Some of the discoverers have been sure that they have found in many cases the one single measure to be used as an index of all desirable changes. Others have consciously aimed to standardize scales for certain definite factors closely related to important elements of vital efficiency, such, for example, as Cramp-ton's blood ptosis scale.

A tentative classification or list of such measures follows:

1. Measures of degree of defects and relative freedom from serious ailments and defects
2. Weight, height, chest expansion, lung capacity, and combinations of these
3. Circulatory-system measurements and standards
4. Measurements of mentality, treated as a part of physical measurements
5. Physiological-age standards
6. Standards for various types of physical skill and ability, especially athletic

It seems that at present at least four types of measures are essential, namely, (1) the medical scale, for determining relative freedom from ailments and physical defects, including mental; (2) the physical scale, or bodily measurements, for determining physiological condition; (3) a circulatory-system test, for measuring a very important prerequisite to vital efficiency not tested above, and (4) a physical efficiency scale, for measuring selected types of physical ability. To this may be added (5) some kind of an objective measure of knowledge of games and other subject matter of physical education, of ability to co-operate, to practice physical exercise out of school, and of the general good-will which marks the physically fit. The latter test will have to be rather indefinite, but marks can be given for such distinctions as are readily discernable.

The Medical Standards. Two principal uses of medical standards are desirable: (1) social, (2) individual. We need a tentative standard classification and terminology of all school disorders with statements of frequency and reasonable deviations for each. Thus, in cities that have done little or nothing to discover, remedy, and prevent defective teeth in children, it will be found that about two-thirds of the children are seriously in need of dental treatment and preventive measures in any one school year. On further investigation we may allow for a deviation of perhaps ten above this standard for natural differences in heredity. A city as a whole can be measured by the degree to which these preventable and correctible dental defects are discovered and remedied or prevented. Where accuracy and comparable results are necessary, as in a school survey, a random thousand or more of the children should be examined and certain schools inspected for a month or more by a group of physicians and nurses who have standardized their work and who have made such surveys elsewhere, after a start has been made. This is the social use of medical standards. Our school surveys have been weak in that they have not seriously attacked this prime problem of the efficiency of the schools in remedying and preventing the extensive pathological conditions of children. We suggest the use of a tentative classification, terminology, and statement of conservative frequencies with deviations that will be found

in city schools that have not had veritable 'crusades' of health promotion.³

In the longer report I have mentioned and described many of the various individual scales for determining some phase of physical condition or ability. Here we offer only a five-fold scale, or score-card, for measuring some of the principal results of physical education, selected and built up from the many already invented. We hope later to offer results of testing and standardizing it with thousands of children.

SCALE FOR MEASURING PHYSICAL EDUCATION

(Based on 100 points)

- | | | | |
|-----|--|--------------|----|
| I. | Health Scale (Rapeer's) | total points | 25 |
| | Count off four points for each serious ailment or defect reported during the school year. Add the four points when remedied or corrected. For uncleanness reported, count off one and do not add one when corrected. Subtractions should be in proportion to gravity and after consequences of ailments but is not attempted here. (Cf. Footnote 3.) | | |
| II. | Physiological Efficiency Scale (Foster's) . . | total points | 15 |
| | Follow directions given by Dr. W. L. Foster in the <i>American Physical Education Review</i> for December, 1914. Pulse rate (standing) (1) before, (2) immediately after, and (3) 45 sec. after a definite amount of work has been done (running in place for exactly 15 sec. by stop-watch, at rate of 180 steps per minute.) | | |

METHOD OF MAKING TEST

1. Take pulse rate standing for thirty seconds or longer, if there seems to be much nervousness. Then record the rate per minute (A).

³(See the writer's *School Health Administration*, page 351, and *Educational Hygiene*, pages 225 and 211. Also *The Administration of School Medical Inspection*, page 60 and the Proceedings of the N. E. A. for 1913, page 657. Standardization of the examinations has been suggested in these volumes and Dr. B. T. Baldwin, of Swarthmore, Pa., has also made certain standardizations. The Dumferline, Scotland, index and standardization of nutrition is used by the New York Association for Improving the Condition of the Poor and seems the best obtainable. See F. A. Manny, *School and Society*, Jan. 22, 1916.)

2. Have the applicant run in place for exactly fifteen seconds by stopwatch, at the rate of 180 steps per minute. Then have applicant stop and stand at ease. Take pulse rate immediately for five seconds (or for fifteen seconds, until observer becomes proficient in taking pulse rate and using stopwatch.) Record the rate per minute (B).

3. After applicant has stood at ease for 45 seconds, take the pulse rate per minute again. Record the rate per minute (C).

4. Add together the values of the rates in 1, 2, and 3, as given below, observing minus signs. The total represents the final mark.

METHOD OF SCORING

A, IN POINTS		B MINUS A, IN POINTS	C, IN POINTS
Pulse rate before test	Points	Difference in pulse rate before and immediately after test (B—A)	Difference in pulse rate before test and after 45" rest (standing (C—A))
100 or less.....	0	0 to 20.....15 (maximum)	5.....—1
101 to 105.....	—1	21 to 30.....13	6 to 10.....—2
106 to 110.....	—2	31 to 40.....11	11 to 15.....—3
111 to 115.....	—3	41 to 50..... 9	16 to 20.....—4
116 to 120.....	—4	51 to 60..... 7	21 to 25.....—5
121 to 125.....	—5	61 to 70..... 5	
126 to 130.....	—6		
131 to 135.....	—7		

Example: A pupil has a pulse rate of 95 at the beginning (A), then one of 130 after running the U. S. double-quick time (180 steps per minute) for 15 seconds, (B), and finally a rate of 110 per minute after standing at rest for 45 seconds. His A rate is less than 100, so he would get, according to the left-hand table, 0 points. The difference between B and A is (130-95) 35, which according to the middle table would give him 11 points out of a possible 15. The difference between C and A is (110-95) 15, which, according to the right-hand table gives him —3 points.

Add together the three values (0, 11, and —3) and we have a final score for physiological efficiency of 8 out of a possible 15.

III. Physical Development Scale (Baldwin's) ...total score 20

Use Professor Baldwin's scales for boys and girls given in the *Fifteenth Yearbook of the National Society for the Study of Education, Part I*, Public School Publishing Co., Bloomington, Illinois. A card for each child obtainable from the inventor, Professor B. T. Badwin, Swarthmore, Pa.

AGE STANDARDS FOR THE BALDWIN'S TWO COEFFICIENTS FOR BOYS AND GIRLS

Age	5 ²	6	6 ²	7	7 ²	8	8 ²	9	9 ²	10	10 ²	11	11 ²	12	12 ²	13	13 ²	14	14 ²	15	15 ²	16	16 ²	17	17 ²
W-H	.95	.95	.96	.98	1.07	1.09	1.12	1.17	1.19	1.23	1.30	1.33	1.33	1.42	1.46	1.52	1.51	1.55	1.59	1.63	1.78	1.79	1.88	1.90	1.88
B																									
V.H.	1.16	1.44	1.50	1.61	1.71	1.73	1.85	1.86	2.03	2.05	2.25	2.21	2.22	2.35	2.52	2.59	2.57	2.66	2.79	3.00	3.23	3.21	3.30	3.50	3.53
W-H	.93	.92	.95	1.02	1.04	1.11	1.13	1.13	1.18	1.22	1.33	1.36	1.49	1.51	1.53	1.62	1.69	1.73	1.76	1.84	1.83	1.84	1.85	1.86	1.87
G																									
V-H	.93	1.33	1.36	1.51	1.61	1.65	1.66	1.71	1.76	1.89	1.98	2.07	2.09	2.22	2.38	2.46	2.44	2.50	2.54	2.63	2.73	2.78	2.81	2.89	2.90

B = Boys. W-H = Weight-height coefficient (weight ÷ height)
 G = Girls. V-H = Vital-height coefficient (breathing capacity ÷ height)

Deductions: For each half-year that the pupil falls below the normal figures for the weight-height coefficients given on Baldwin's cards for his age, deduct 1½ points, also for each half-year below the normal for the vital-height coefficient. That is, three points are deducted from the possible score of 20 if the pupil falls a half-year below the norm for his age in both these coefficients, or 6 points for a full year's deviation below in both. Weight-height coefficient equals weight divided by height. Vital-height coefficient equals breathing capacity divided by height. The measures are for nude children and are perhaps a little high. (See Baldwin's bulletin published by the United States Bureau of Education and his report in the *Fifteenth Yearbook*.)

IV. Physical Ability Scale (W. A. Stecher's) . . total score 25

Use the following revised scores for different abilities developed by Mr. W. A. Stecher as Director of Physical Education of the Public Schools of Philadelphia.⁴ Deductions: five points to be cut off for each year below standard for age and sex for *good* performances. (See following chart. Page 191.)

⁴See also his form of report and score sheet for determining the efficiency of a school in physical education, also his Educational Gymnastics, J. J. McVey Co., Philadelphia.

CHART SHOWING AGE-AIMS (AVERAGE PERFORMANCES) ALSO, IN PAREN-
THESES, GOOD PERFORMANCES, BY AGES AND SEX (AFTER STECHER)

EVENTS		Years	8	9	10	11	12	13	14	15
RUNNING 50 YARDS (In seconds and tenths)	GIRLS	9.4 (9.0)	9.2 (8.8)	8.8 (8.4)	8.6 (8.2)	8.4 (8.0)	8.4 (8.0)	8.4 (7.8)	8.2 (7.6)	
	BOYS	9.0 (8.8)	8.8 (8.6)	8.4 (8.2)	8.2 (8.0)	8.0 (7.6)	7.8 (7.6)	7.6 (7.2)	7.4 (7.0)	
RUNNING 60 YARDS (In seconds and tenths)	GIRLS	12.6 (10.0)	12.4 (9.8)	11.6 (9.2)	11.0 (9.0)	10.8 (8.6)	10.8 (8.2)	10.8 (8.6)	11.0 (9.4)	
	BOYS	11.8 (9.4)	11.4 (9.2)	10.8 (9.0)	10.4 (8.8)	10.0 (8.2)	9.8 (8.0)	9.4 (7.6)	9.0 (7.6)	
RUNNING 75 YARDS (In seconds and tenths)	GIRLS	15.4 (12.4)	14.6 (11.0)	14.2 (10.4)	13.8 (10.2)	13.6 (10.2)	13.4 (10.4)	14.0 (11.0)	14.4 (11.8)	
	BOYS	14.1 (11.6)	13.6 (10.8)	13.2 (9.8)	12.6 (9.8)	12.2 (9.6)	11.8 (8.8)	11.4 (8.4)	11.0 (8.0)	
RUNNING 100 YARDS (In seconds and tenths)	GIRLS	19.2 (18.0)	18.6 (16.8)	17.2 (15.8)	16.8 (15.6)	16.6 (15.6)	16.4 (15.4)	16.2 (15.4)	16.2 (15.2)	
	BOYS	19.2 (18.0)	18.6 (16.8)	17.2 (15.8)	16.2 (15.2)	15.4 (15.0)	15.0 (14.4)	14.2 (13.6)	13.4 (13.0)	
STANDING BROAD JUMP (In feet and inches)	GIRLS	3.0 (4.4)	3.1 (4.6)	3.3 (4.9)	3.6 (5.0)	3.8 (5.3)	3.10 (5.6)	4.0 (6.0)	4.1 (6.0)	
	BOYS	3.4 (4.4)	3.8 (4.10)	4.0 (5.4)	4.3 (5.10)	4.6 (6.3)	4.9 (6.6)	5.2 (6.10)	5.5 (7.4)	
RUNNING BROAD JUMP (In feet and inches)	GIRLS	5.5 (6.0)	5.6 (6.2)	5.10 (6.8)	6.6 (7.8)	7.2 (8.4)	8.0 (9.0)	9.0 (10.8)	9.0 (11.8)	
	BOYS	6.0 (6.9)	6.6 (7.0)	7.0 (7.6)	8.3 (9.1)	9.6 (10.8)	11.4 (12.2)	12.6 (13.5)	13.5 (14.7)	
TRIPLE STANDING BROAD JUMP (In feet and inches)	GIRLS	10.4 (12.0)	10.6 (12.6)	10.10 (14.2)	12.1 (14.8)	12.5 (15.8)	12.9 (17.0)	13.0 (17.0)	13.10 (17.7)	
	BOYS	12.0 (14.3)	12.3 (14.8)	13.0 (15.9)	14.0 (16.9)	14.6 (18.7)	15.1 (19.0)	16.4 (20.7)	18.1 (22.4)	
RUNNING HOP, STEP AND JUMP (In feet and inches)	GIRLS (10 foot start)	9.2 (11.0)	11.6 (13.9)	13.8 (17.0)	14.6 (18.8)	15.5 (21.4)	15.6 (21.0)	16.4 (21.2)	16.6 (20.0)	
	BOYS (unlimited run)	10.0 (10.6)	13.0 (15.5)	16.4 (20.5)	18.0 (23.0)	18.8 (24.5)	19.9 (26.0)	21.7 (29.0)	23.0 (29.5)	
RUNNING HIGH JUMP (In feet and inches)	GIRLS	2.2 (2.6)	2.5 (2.8)	2.8 (2.10)	2.9 (3.0)	2.10 (3.2)	3.2 (3.3)	2.11 (3.1)	2.9 (3.1)	
	BOYS	2.2 (2.8)	2.5 (2.10)	2.8 (3.2)	2.11 (3.4)	3.1 (3.6)	3.4 (3.9)	3.6 (4.2)	3.9 (4.5)	
BASKET BALL FAR THROW OVERHEAD (In feet and inches)	GIRLS	12.2 (17.0)	13.8 (20.0)	15.5 (25.0)	17.7 (28.0)	19.4 (31.0)	21.3 (35.0)	22.2 (35.0)	23.4 (36.0)	
	BOYS	14.4 (19.0)	16.2 (22.0)	18.2 (26.0)	20.3 (30.0)	23.3 (35.6)	24.1 (37.0)	26.7 (37.6)	29.1 (39.0)	
BASKET BALL ROUND ARM FAR THROW (In feet and inches)	GIRLS (one step permitted)	13.4 (25.0)	15.1 (31.0)	17.0 (36.0)	19.3 (38.0)	22.2 (42.0)	25.4 (53.0)	27.8 (55.0)	30.0 (57.0)	
	BOYS (one step permitted)	18.5 (36.0)	22.3 (44.0)	25.6 (47.0)	28.7 (53.0)	32.9 (60.0)	36.9 (70.0)	41.5 (73.0)	46.8 (73.0)	
INDOOR BASEBALL FAR THROW	GIRLS (unlimited run)	23.0 (45.0)	25.9 (56.0)	30.6 (60.0)	35.0 (68.0)	43.0 (80.0)	48.9 (87.0)	53.0 (106.0)	53.5 (102.0)	
	BOYS (unlimited run)	37.7 (71.0)	47.4 (56.0)	57.2 (104.0)	67.0 (113.0)	77.2 (120.0)	88.0 (141.0)	102.1 (151.0)	108.1 (187.0)	

V. Mental Qualities scale (Rapeer's) total score	15
	100

This test is suggested in order to give some weight to several mental qualities not tested above—ability to cooperate, qualities of leadership displayed, willingness to practice good posture, good hygiene, and good, clean living, knowledge of physical education, etc. Deductions: according somewhat to the probability curve.

0 to 2 points deducted for about 13 per cent of the children	Score	14-15
3 to 5 points deducted for about 20 per cent of the children	Score	12-13
6 to 10 points deducted for about 34 per cent of the children	Score	6-10
11 to 13 points deducted for about 20 per cent of the children	Score	3- 5
14 to 15 points deducted for about 13 per cent of the children	Score	0- 2

The percentages are based on a thousand or more pupils and cannot be rigidly adhered to for a single class of forty pupils.

Comments. Each of these tests should be refined, elaborated, and standardized. Perhaps certain others should be used or one or more of these greatly modified or eliminated. Other tests have been rejected for one cause or another, such as the time and effort required, the degree of skill necessary in testing, and so on. We believe that the above measures can be made through co-operation between the medical-supervision and physical-education divisions of the general department of educational hygiene, and we solicit criticism and testing of the scale. We do not consider the report as presented as in its final form.

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(Corrected to January 15, 1917.)

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CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

(Revision Adopted in Chicago, February, 1909)

ARTICLE I

Name.—The name of this Society shall be “National Society for the Study of Education.”

ARTICLE II

Object.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ARTICLE III

Membership.—SECTION 1. There shall be three classes of members—active, associate, and honorary.

SEC. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

SEC. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

SEC. 4. Associate members shall receive the publications of the Society, and may attend its meetings, but shall not be entitled to hold office, or to vote, or to take part in the discussion.

SEC. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

SEC. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

SEC. 7. The annual dues for active members shall be \$2.00 and for the associate members \$1.00.

ARTICLE IV

Officers and Committees.—SECTION 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

SEC. 2. The Executive Committee shall consist of the president and four other members of the Society.

SEC. 3. The president, vice-president, and secretary-treasurer shall serve for a term of one year. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

SEC. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

SEC. 5. A board of trustees consisting of three members shall be elected by the Society for a term of three years, one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society, and make an annual financial report.

SEC. 6. The method of electing officers shall be determined by the Society.

ARTICLE V

Publications.—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

ARTICLE VI

Meetings.—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ARTICLE VII

Amendments.—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE MEETING OF THE NATIONAL
SOCIETY FOR THE STUDY OF EDUCATION
AT DETROIT, MICHIGAN,

MONDAY EVENING, FEBRUARY 21, 1916

Somewhat over twelve hundred persons assembled in the auditorium of the Board of Commerce at 8 o'clock to hear the discussion of Part I of the Fifteenth Yearbook of the Society. President Condon called the meeting to order and presided during the presentation of the following program of ten-minute addresses:

The General Significance of Tests and Standards of Efficiency

G. D. Strayer, Professor of Educational Administration,
Teachers College, Columbia University, New York City.

The Derivation of Scales in School Subjects

B. R. Buckingham, Chief Statistician, Department of Education,
New York City.

*The Work of the Bureau of Research and Efficiency of Kansas
City, Mo.*

George Melcher, Director, Bureau of Research and Efficiency,
Kansas City, Mo.

The Use of Standard Tests at Salt Lake City, Utah

E. P. Cubberley, Professor of Education, Leland Stanford
Junior University, Stanford University, Cal.

*The Value to Superintendents and Teachers of the Courtis Tests in
Arithmetic*

S. A. Courtis, Supervisor of Educational Research, Detroit,
Mich.

*Standard Tests as Aids in the Classification and Promotion of
Pupils*

Daniel Starch, Assistant Professor of Psychology and Education,
University of Wisconsin, Madison, Wis.

Completion Tests for Public-School Use

M. R. Trabue, Instructor in Educational Administration,
Teachers College, Columbia University, New York City.

Mental Tests in Public-School Work

J. C. Bell, Professor of the Art of Teaching, University of
Texas, Austin, Texas

The Use of Mental Tests in the School

G. M. Whipple, Professor of Education, University of Illinois,
Urbana, Ill.

Discussion

L. C. Karpinski, Associate Professor of Mathematics, Univer-
sity of Michigan, Ann Arbor, Mich.

After some further discussion a short business meeting of the Society was held. The names of Charles De Garmo, formerly professor of education at Cornell University, and Paul Hanus, professor of education at Harvard University, having been presented by the Executive Committee in nomination for honorary membership in the Society, were voted upon and these two former members of the Society were unanimously elected honorary members.

It was voted to endorse the recommendation of the Executive Committee that it be empowered to send an official delegate to represent the Society on the occasion of the dinner to be held at Cambridge, Massachusetts, March 11, 1916, in commemoration of Professor Hanus' twenty-five years of educational work at Harvard University.

The President announced that the Executive Committee had reappointed G. M. Whipple as Secretary-Treasurer of the Society. The report of nominations presented by the Executive Committee and Board of Trustees was heard and the persons cited were elected, as follows:

For President

CHARLES E. CHADSEY

Superintendent of Schools, Detroit, Michigan

For Vice-President

JAMES H. VAN SICKLE

Superintendent of Schools, Springfield, Massachusetts

For Trustee (to serve three years)

EDWARD C. ELLIOTT

Chancellor, University of Montana, Helena, Montana

For Member of Executive Committee (to serve four years)

H. LESTER SMITH

Dean of the College of Education, University of Indiana,
Bloomington, Indiana

It seemed to be the consensus of opinion that the meeting was one of the most stimulating and interesting that the Society had conducted.

GUY M. WHIPPLE, *Secretary.*RANDALL J. CONDON, *President.*

**FINANCIAL REPORT OF THE SECRETARY-TREASURER OF THE
NATIONAL SOCIETY FOR THE STUDY OF EDUCATION**

DECEMBER 23, 1915, TO DECEMBER 31, 1916

RECEIPTS FOR 1916

Balance on hand December 23, 1915.....	\$1,543.25
From sale of <i>Yearbooks</i> by The University of Chicago Press:	
June to December, 1915.....	\$ 790.05
January to June, 1916.....	1,023.96
	\$1,814.01
Interest on savings bank account:	
To January 1, 1916.....	\$ 17.77
To July 1, 1916.....	18.63
	\$ 36.40
Dues from 600 members (current and delinquent)	\$ 757.18
	\$2,607.59
Total income for the year.....	
Total receipts including initial balance..	\$4,150.84

EXPENDITURES FOR 1916

Publishing and distributing "Yearbooks":

Printing 1800 <i>15th Yearbook, Part I</i> ("Standards and Tests")	\$ 581.50
Printing 1200 additional <i>15th Yearbook, Part I</i>	128.76
Distributing <i>15th Yearbook, Part I</i>	55.65
Printing 1600 <i>15th Yearbook, Part II</i> ("Persistence in School")	412.02
Distributing <i>15th Yearbook, Part II</i>	37.52
Stereo matrices, <i>15th Yearbook, Parts I and II</i>	58.40
Printing 1500 additional <i>14th Yearbook, Part I</i> ("Minimum Essentials")	175.50
Printing 1000 additional Dewey's "Ethical Principles"	30.00
Distributing <i>Yearbooks</i> to members, miscellaneous....	13.00
	\$1,492.35
Total cost of <i>Yearbooks</i>	
Carried forward.....	\$1,492.35

Brought forward..... \$1,492.35

Secretary's office:

Secretary's salary from end of Cincinnati meeting, February, 1915, to end of Detroit meeting, February, 1916	\$ 100.00
Secretary's traveling and hotel expenses for Detroit meeting	48.55
Expenses as delegate to Hanus celebration.....	78.75
Bookkeeping and typewriting.....	41.00
Stamps	38.00
Stationery	30.00
Telegrams	2.06

Total for Secretary's office..... \$ 338.36

Total expenses \$1,830.71

SUMMARY

Total expenditures for 1916.....	\$1,830.71
Balance on hand December 31, 1916: { Savings account..	2,217.54
{ Checking account.	100.59
{ Dues undeposited.	2.00
Total.....	\$4,150.84

MEMBERSHIP

Number of active members (including three honorary) December 31, 1916.....	234
Number of associate members December 31, 1916.....	366
Total membership	600

GUY M. WHIPPLE, *Secretary-Treasurer.*

THE
SIXTEENTH YEARBOOK

OF THE
NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART II

THE EFFICIENCY OF COLLEGE STUDENTS
AS CONDITIONED BY
AGE AT ENTRANCE AND SIZE OF HIGH SCHOOL

BY

BENJAMIN FLOYD PITTENGER, PH.D.
University of Texas

Edited by GUY M. WHIPPLE, Secretary

PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS
1919

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SECRETARY OF THE SOCIETY

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First Printing Aug., 1917—1500 copies
Second Printing Jan., 1918—500 copies
Third Printing Mar., 1927—200 copies

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EDITOR'S PREFACE

The study presented herewith by Mr. Pittenger, of the University of Texas, was carried on by him while he was a member of the instructional staff of the University of Minnesota and has been accepted as a thesis for the doctorate degree at the University of Chicago.

The problem is one of both academic and practical interest: is the quality of work done by the young men and women who enter our colleges affected by the age at which they enter or by the size of the high school from which they come?

Our readers will find the problem set forth clearly in the introductory chapter and a summary of the conclusions in the last chapter. The detailed presentation of the method of study and of the materials on which the conclusions are based will be found in the intervening chapters.

G. M. W.

AUTHOR'S PREFACE

In the chapters which follow, and which report the results of a statistical study of some problems connected with high-school and college administration, the writer has tried to meet the demands of two very different classes of educational workers. On the one hand are high-school and college instructors and administrators, whose interests are centered in practical results. On the other hand are educational investigators, who are interested in the accumulation of a comprehensive and well-organized body of reliable information, and who will properly insist upon a detailed presentation of all of the data and methods underlying the conclusions reached.

The writer's obligations are many. He is indebted to the managers of the research fund of the University of Minnesota for financial assistance in securing the scholarship records of the college students surveyed. Dr. George F. James, former dean of the College of Education of the University of Minnesota, gave much encouragement and assistance in the initial stages of the enterprise. Director Charles H. Judd and Dr. H. O. Rugg, of the School of Education of the University of Chicago, have contributed the most careful criticism and have assisted in preparing the manuscript for the press. Finally, the writer would express his particular obligations to the superintendents and principals of high schools in Minnesota and adjoining states, whose laborious transcription of the high-school records of thousands of pupils was indispensable to the successful consummation of the work.

B. F. P.

THE EFFICIENCY OF COLLEGE STUDENTS AS CONDITIONED BY AGE AT ENTRANCE AND SIZE OF HIGH SCHOOL

INTRODUCTION

STATEMENT OF PROBLEMS

This study seeks mainly to evaluate two factors in the efficiency shown as students in the College of Science, Literature, and the Arts at the University of Minnesota, by 828 graduates of that university's tributary high schools. The factors considered are the ages at which these pupils entered upon their college work, and the size and general characteristics of the high schools from which they came. The principal problems are as follows:

1. What entrance ages were correlated with the highest degree of college efficiency? How may these correlations be explained?
2. To what extent did the scholarship records of the college students show correlation with the number of pupils enrolled, and with the number of pupils per teacher, in the high schools from which they came? How can one best explain these relations?

The writer would acknowledge at the outset that the factors, the influence of which upon college efficiency he seeks to discover, are very broad and complex. Today, for instance, there is a tendency to substitute the study of physiological for that of chronological age, *i. e.*, actual bodily maturity for ages in years and months; at least to emphasize the fact that chronological age is a very imperfect index of physical and mental maturity. To this tendency the study of chronological entrance ages in the present investigation is apparently opposed. But a review of the studies thus far made upon the relations obtaining between chronological and anatomical ages shows them, as at present defined, to be practically coincident after the chronological age of seventeen.¹ As

¹See Chapter II, Section 2.

almost all college students enter at seventeen or later the issue raised is not important. Furthermore, as the study proceeds, it will appear that other causes than differences in maturity are adduced to account for the phenomena discovered.

As to the second factor, it is probable that the size of a high school exercises only an indirect influence upon the college efficiency of its graduates, through other more vital factors which are correlated with it. The size is but the sign of their presence or absence. A large school, for instance, is generally better equipped than a small school, and usually employs teachers with broader training and experience.² Both of these facts, and probably others, should make for the higher efficiency of its graduates in college. On the other hand the small school is usually characterized by smaller classes,³ and thus affords better opportunity for individual attention. Enough has been said to establish the rather obvious point that the phrase "size of high school" is a blanket expression; that size in itself is not effective, but that it is significant because of other factors which are connected with it.

From this point of view an intensive study of the relation existent between the size of a high school and the college efficiency of its graduates looks like wasted effort. But to the school and college administrator, size is a criterion easy to ascertain, and if a consistent relation between these variables can be established, the results promise to serve administrative, if not scientific ends.

Two measures of college efficiency are utilized in this investigation; first, comparative rank in scholarship as indicated by the marks received; and second, the length of time spent in college work. An efficient student is one who does good work, and who remains to complete his college course. In fact, scholarship and retention are regarded, not merely as criteria of college efficiency, but as constituting that efficiency in the meaning of the present study. Efficiency is synonymous with good scholarship and with persistency to the end. By taking this position, the author proposes to avoid an unprofitable and vexatious discussion of the

²Coffman, L. D. *The Social Composition of the Teaching Population.*

³Judd, C. H., and Counts, G. S. *Study of the Colleges and High Schools of the North Central Association.* *Bull. Bureau of Education, 1915, No. 6.*

ultimate significance of both criteria, particularly of school and college scholarship marks.

Through its measurement of efficiency in terms of marks and retention this investigation is allied with two rather extensive groups of previous studies. The first group comprises the numerous investigations based upon school and college marks; the second, the equally numerous investigations of elimination and retention. Perusal of the many papers dealing with these subjects, particularly those based upon school marks, reveals a grave need for a summary of the methods pursued, looking toward careful criticism and ultimate standardization. The reader becomes amazed at the great variety of methods used to achieve very similar ends, and at the even greater differences in reliability which these methods display. Probably no absolute standardization of method is either possible or desirable. Doubtless capable students will continue to differ as to the virtues of certain forms of procedure. But the evidences of grossly amateurish investigation ought to disappear; the conclusions which have followed from hasty labor should be pointed out, and no small part of the work which has been performed probably will have to be repeated. Preliminary to that process we must, so far as possible, standardize our methods.

With some diffidence the writer presumes to offer a summary of the methods heretofore employed in studies of marks and to point out what appear to be the more obvious types of error, with suggestions for their correction. The first chapter of the monograph is devoted to this purpose.

CHAPTER I

METHODS PURSUED IN EARLIER STUDIES BASED UPON SCHOOL AND COLLEGE MARKS

A review of the methods pursued in the various studies of school and college marks necessitates a classification of these studies according to the nature of the problems which they attack. From this point of view they fall readily into three fairly distinct classes, which may be described as (1) studies of distribution, (2) studies of continuity, and (3) studies of comparison. In some investigations more than one of these types of problem may appear, but none has been observed which introduced marking problems of a different sort.

SECTION 1

STUDIES OF DISTRIBUTION

Definition. Under this title may be included those studies which have sought chiefly to determine whether or not the curve representing the distribution of scholarship marks follows the form of the binomial or normal curve that presumably represents the distribution of biological traits generally. As a rule, these studies have been conducted by persons interested in defending or opposing the theory that pupils should be graded in their school achievement according to their rank among their classmates, rather than by comparison with some intangible standard of ideal accomplishment. With the recent development of objective scales for the measurement of efficiency in school subjects, the necessity for arguments and studies of this character has considerably declined. For this reason, and because these studies have little bearing upon our own set of problems, our summary of methods in this field is very brief.¹

Methods. The methods which have generally been pursued in studies of this character comprise three steps.

¹For a review of results of studies of distribution see Rugg, H. O., Teachers' marks and marking systems. *Educational Administration and Supervision*, Vol. I, 117-142. Also Pittenger, B. F., Scientific studies of the marking system, *American Schoolmaster*, April, 1915, 145-157.

1. Where schools with different marking scales are included in one study, these different scales usually must be reduced to comparable units. Those ordinarily met with are the percentage and the letter scales. In the reduction of these to comparable bases the following points must be kept in mind:

(a) The letter scale may be converted into a percentage scale by properly weighting each of its component divisions. Similarly, the percentage scale may be changed into a letter scale by representing certain ranges of percentage marks by letter units.

(b) Where scales with different passing marks are embraced in one study some readjustment may be necessary. Few, if any, more students are failed in schools with a passing mark of 70 than in schools with a passing mark of 60. Consequently, the marks of such schools can be regarded as comparable only when those of the schools possessing the lower passing marks have been properly weighted. One method which has been used for this purpose is to weight marks of the schools with the lower passing marks, by adding to each an amount equal to the difference between the median marks of each type of school.²

2. The second step consists in collecting the marks into unit groups. The nature of these groups depends upon the marking scale involved, as well as upon the nature of the problem. Where the letter scale is used the method is usually the simple one of determining the number of pupils to whom each letter has been assigned. Where the percentage scale is employed the marks may be collected into percentile groups, or into groups of five or tens. The first is the more common mode in studies of this kind.

3. The third step consists in plotting a curve to represent the form of the distribution. Here distances on the abscissa represent the marking units, with the higher units usually toward the right-hand side of the graph. This direction has been reversed by a few students. Distances on the ordinate represent the number of cases comprised within each marking unit.

The majority of distribution studies are complete at this point, or after comparison of the actual distribution with the theoretical

²Starch, D. and Elliott, E. C. Reliability of grading in mathematics. *School Review*, Vol. 21, 254-259.

curve. But a few studies, possessing peculiar aims, have gone further in their analysis. The methods in these cases are usually appropriate only to the special problems raised. Those which are capable of extended application are described in the sections which follow.

SECTION 2

STUDIES OF CONTINUITY

Definition. Under this head are to be grouped all of those studies which aim principally to compare the school efficiency of a pupil or a group of pupils in one school subject or at one stage of schooling with the efficiency of the same pupil or group of pupils in another subject or at another stage of schooling. The essential thing is that the same students' records are compared, not those of different students.

Two general types of continuity studies are to be recognized. The first is concerned with the maintenance of scholarship rank in passing from the elementary to the high school or from the high school to the college, and from one to another of the succeeding school and college years. The second has reference to the correlation of abilities manifested by the same pupils in different school subjects.³

Methods. We may note the following steps in the procedure:

1. The first step raises the question of the proper quantity of materials upon which such a study should be based. Two practices are noteworthy. The majority of investigators have sought for large quantities of marks, trusting to numbers to equalize errors due to differences in the conditions under which these marks were received.⁴ A few, however, have stressed the point of similarity of conditions, and have held that a limited number of cases for which such similarity can be proved is preferable to a larger number regarding whom these facts are not definitely known.⁵ Both types

³For a review of results of continuity studies, see Pittenger, B. F. Studies based upon school and college marks. *American Schoolmaster*: May, 1915, 207-219.

⁴See, for instance, Dearborn, W. F. *Relative Standing of Pupils in the High School and University*. Bulletin, University of Wisconsin, No. 312.

⁵Frailey, J. E., and Crain, C. M. Correlations of excellence in different school subjects. *Journal of Educational Psychology*, Vol. 5, 141-154.

of study are valuable, and if their results coincide, the validity of their combined conclusions seems reasonably assured.

2. The problem of the subject-unit versus the hour-unit may next be raised. Shall a mark in one subject be regarded as equal in value to the same mark in any other subject, regardless of the number of hours per week devoted to each? Or shall the mark in each subject be weighted according to the number of hours involved? Only one study has been noted in which this problem has been definitely raised and the latter procedure adopted.⁶ Doubtless, the prevailing practice is more or less warranted by the fact that in the great majority of courses the number of hours involved is identical, and by the principle that subjects with more than the usual number of hours in general compensate for those with less. However, the problem here designated should be kept in mind, and the probable extent of the error involved should always be estimated.

3. In the third place, care should always be exercised that the cases chosen are representative, and are not so selected as to invalidate the conclusions based upon them.

4. Too many of the earlier studies of school marks have failed to take account of the sexes of the pupils involved. With the onset of adolescence, and even before, sex differences become so marked that there would seem to be no excuse for this neglect. It may be advanced as a general principle that the sex factor should be considered in every study dealing with school marks, no matter what the ages of the pupils, unless there is preliminary evidence to show that it is of no importance. We have no mere "pupils" in our schools; each is either male or female.

5. Some studies have been based upon typical marks only, rather than upon all of the marks earned by the pupils concerned. Among these typical marks are failures, promotions, and honors. Where such marks are sufficient to answer the questions raised, their use is a means of great simplification, but it is doubtful whether in general they are completely satisfactory indices of a pupil's work.

6. When the foregoing questions have been disposed of, it

⁶Jones, A. L. Entrance examinations and college records. *Educational Review*, Vol. 48, 109-122.

usually becomes necessary to reduce the marks to comparable numerical form. Here the procedure described in Step 1 of Section 1 may be followed, or, as is more common, the units of a letter scale may be given values other than percentage equivalents.⁷ It should be repeated that in studies of continuity we are concerned with comparing two series of marks earned by the same group of students. Thus, it is clear that while the marks in each series should be reduced to the same terms, it is not necessary that both series be alike if the ranking method of comparison (see Step 7a) be adopted.⁸

We now come to a parting of the ways. Two general methods for ascertaining the degree of continuity between the two series now present themselves. One is by comparison of absolute marks; the other is by means of relative ranks. Methods differ radically in the two cases.

7. Step 7 is the final step in determining degree of continuity if one follows the method of comparing the totals of absolute marks. Three forms of this method appear in the studies reviewed.

(a). Morgan⁹ comments upon the value of "conditional promotions" in the University of Chicago High School, by comparing the total percents earned by a group of conditioned pupils during a given term, with the total percents earned by the same group during the term following their conditioned promotion.

(b). Gray¹⁰ compares the efficiency of pupils in certain school subjects from year to year by finding the differences between the percentage marks received by each pupil each year, and then totaling and averaging these differences.

⁷Here the greatest variety prevails. One approach to a scientific method for finding substitutional values has been worked out by Burris, W. P. Correlations of abilities involved in secondary school work. *Columbia University Contributions to Philosophy, Psychology and Education*, Vol. 9, No. 2, pp. 16-28. For the best work of this sort to date, see Kelley, T. L. *Educational Guidance* Columbia University Contributions to Education. No. 71, pp. 86-92.

⁸To illustrate the comparison of two ranked series which are based respectively upon two entirely different marking systems, see Thorndike, E. L. An empirical study of college-entrance examinations. *Science*, N. S., Vol. 23, 839-845.

⁹Morgan, W. P. Conditional promotions in the University High School. *School Review*, Vol. 19, 238-247.

¹⁰Gray, C. T. Variations in the Grades of High-School Pupils. *Educational Psychology Monographs*. No. 8, Baltimore, 1913.

8. Step 8 completely displaces Step 7 in studies of another character, which seek to determine continuity by means of ranks rather than by absolute marks. Here the students are ranked according to the scholarship merit displayed individually in each of two subjects or stages, with or without reducing the marks to comparable bases as described in Step 3. Where the ranking is based directly upon the marks of individual teachers or individual schools, this reduction is unnecessary, and Step 8 replaces Step 3 also. The following modes of ranking appear in the studies reviewed:

(a). Ranking according to marks received in each separate recitation group under the same teacher. This method is undoubtedly the best in most cases where the original marks are in the form of percents, as it avoids errors arising from combining the marks given by different teachers.¹¹ Where the letter scale is used, however, and where only one mark appears for each pupil, too many pupils must ordinarily be assigned the same rank. This is particularly disastrous when the tertile, quartile, or quintile grouping is to follow. In such a case, actual trial has shown that more than three-fourths of the students will be assigned to their quartile, or quintile positions largely by chance.

(b). Ranking based upon accumulated marks. Here all of the marks given to a pupil by different teachers are brought together before the ranking takes place. Ranks may then be based upon (1) a comparison of the total values of the percents or letter-equivalents,¹² or (2) a comparison of their average values. The latter method is by far the more common one.

Where pupils from two or more elementary schools have been studied for their high-school continuity in scholar ship rank, or pupils from two or more high schools for college continuity, in most cases (1) the students have been ranked in each school separately, but in some cases (2) all of the students have been thrown together before the ranking has been made, irrespective of differences in the marking standards prevailing in the different schools.¹³ It seems

¹¹Gray, C. T.: op. cit. See also Starch, D. Correlations among abilities in school subjects. *Journal of Educational Psychology*, Vol. 4, 415-418.

¹²Thorndike, E. L., op. cit.

¹³See Shallies, G. W. Distribution of high-school graduates after leaving school. *School Review*, Vol. 21, 81-91.

needless to say that only the former of these last two methods is permissible.

The weakness of the method of ranking according to accumulated marks is that it assumes that a mark given by one teacher is equivalent to a mark of the same denomination given by any other teacher. This assumption is not valid. Some teachers consistently mark much higher than others, so that the 70 of one teacher may be as good as the 85 of another. However, where the study involves enough cases these errors will possibly balance each other. But in a study involving a few cases the method described in the preceding section should be adopted, and the marks of the different teachers should be so weighted as to be made comparable.

9. When a group of students has been ranked in order of merit from poorest to best according to the quality of work done by them at one stage of their course or in one school subject, and has also been ranked according to the efficiency shown at another stage or in another subject, the type of study with which we are now dealing seeks to determine the degree of continuity obtaining between these two rankings. Does a student who ranks high in the first series also rank high in the second series, and *vice versa*? The following methods have been pursued in attempting to answer this question:

(a). The plus (+) and minus (—) median method.¹⁴ In this method the investigator finds the number of those ranking above or below the median in the first series, who continue to rank above or below the median in the second series.

(b). The modified-median¹⁵ or tertile-median¹⁶ method. Here the investigator finds the proportion of those students ranking in the highest tertile in the first series who rank above the median in the second series. The continuity between the lowest third and lower half is similarly ascertained.

(c). Coefficients of correlation. The coefficients which have

¹⁴Dearborn, W. F. Qualitative elimination from school. *Elementary School Teacher*, Vol. 10, 1-13.

¹⁵Clement, J. A. *Standardization of the Schools of Kansas*. University of Chicago Press, 1912.

¹⁶Dearborn, W. F. Practical results of recent studies in educational statistics. *School Review*, Vol. 21, 297-306.

been chiefly used for the determination of positional continuity are the Pearson "product-moments" and the Spearman "rank-difference" methods. It is not our purpose in this connection to describe and explain in full these methods. They are implements of general statistics, which have been borrowed from that larger field by educational statisticians, and have been described already in many places.¹⁷

However, the writer is persuaded that there has existed a tendency to resort to these highly specialized measures when simpler measures would better serve the purpose. Where a simple quantitative statement of the probable general relationship existing between two series of variables is all that is demanded, the correlation coefficients will often serve admirably. But where more than this is wanted they are useless, for they can give no more. They do not generally indicate relations obtaining between particular portions of the two series of variables, nor do they reveal the peculiarities of form which either series may possess. In a field of research so immediately practical as educational research may and should be, these relations and forms are often more important than the general relations, so that the inadequacy mentioned becomes serious.

(d). Method of tertile, quartile, or quintile continuity. In this method each of the two ranked series is divided into three, four or five equal numerical parts by beginning at the upper end of each series and counting downward. The students occupying each position in the first series are then traced to their respective positions in the second series, and their positional continuity determined. Various methods of stating this continuity have been devised.

(1). Simple statement of the percentages of the students occupying the low, middle, and high groups in the first series who are found in each group in the second series.¹⁸

¹⁷Whipple, G. M. *Manual of Physical and Mental Tests*. Warwick and York, Second Edition, 1915, Part I.

¹⁸Clement, J. A. *Op. cit.*

(2). Method of "gains and losses." This method was devised by Gray, and corresponds to the same author's method of gains and losses in the use of percentage marks described above. It consists in finding the algebraic sum of the quintile variations undergone by the different pupils in passing upward from grade to grade. The same principle is applicable in estimating the amount of tertile or quartile variation. It was applied to the study of tertile variation in the recent Cleveland survey.

(3). Graphic representation. Different forms of graphic representation have been proposed by Clement¹⁹ and Carter.²⁰ As both of these sources are readily accessible, it seems unnecessary to reproduce their methods here.

(e). Kelly²¹ has pointed out a rather obvious defect of the tertile, quartile, or quintile method of correlation, and has proposed a means of avoiding this defect which can be applied to continuity studies. The defect is described thus: "When a distribution, say of fifty marks, is divided into quintiles, the tenth mark needs to change but one rank in order to fall into the next quintile; and thus register one quintile change. The first individual in the distribution, on the other hand, has to change by as much as ten ranks in order to register one quintile change."

He describes his means of avoiding the defect as follows:

"If we record in the left-hand column of the accompanying table the ranks of the boys in their own high-school group, and in the second column their ranking in the freshman college group, we may count the quintile gains or losses by subtracting each rank from the corresponding rank in the other series. If this difference equals one-fifth of the total number of ranks in the series, it will register as one quintile change. If it equals two fifths of the number of ranks in the series it will register as two quintile changes, etc. For example, in the table given herewith, from fourth to eighteenth rank is a change of fourteen places and we register a loss of one quintile. From tenth to forty-ninth place is a drop of three quintiles, etc."

¹⁹See Clement, J. A. Op. cit.

²⁰Carter, R. E. Correlation of elementary and high schools. *Elementary School Teacher*, Vol. 12, 109-118.

²¹Kelly, F. J. *Teachers' Marks*. Teachers' College Contributions to Educ. No. 66, 1914.

KELLY'S TABLE.

HIGH-SCHOOL RANKS.	FRESHMAN COLLEGE RANKS.	QUINTILE GAINS OR LOSSES.
1	3	0
2	5	0
3	2	0
4	18	-1
5	8	0
6	19	-1
7	7	0
8	14	0
9	9	0
10	49	-3
11	17	0
12	6	0
42	38	0
43	13	3
44	22	2
45	25	2
46	21	0
47	42	0
48	23	2
49	34	1
50	48	0

The point which Kelly makes is undeniably valid, and the substitute method is useful in certain types of continuity studies. But in the present writer's opinion Kelly has over-stressed both the importance of his criticism and the value of his substitute method. The criticism which he advances may be made with equal propriety upon every marking system now in use, in that all of them involve a series of discrete units. That is to say, the different units in any marking system, however numerous, are sharply separated each from each, like steps in a stair, while the variations in scholarship represented by these marks are continuous, and in a large group ranked in serial order may be practically infinitesimal. Some students are clearly A students; others are less clearly A students; yet both will be marked A. The only marking system which even nominally avoids this difficulty is the percentile system, because of its more numerous and consequently finer discriminations: yet it is very doubtful whether these finer distinctions are anything more than artificial. Furthermore, the final step in Kelly's method also involves a discrete series, and introduces again the very type of error that it is designed to avoid. Finally, it is a method that can-

not be applied in any way to studies of comparison, because in these studies the different ranked series comprise different groups of students.

In the methods which we have described we have noted the division of the ranked series into halves, tertiles, quartiles, and quintiles. There is evidence of a growing preference for the tertile or quintile divisions, because an even division into either halves or quartiles splits the mediocre group in two, while the odd divisions leave this middle group intact and differentiate those students who rise above or fall below mediocrity. Of the two odd divisions the quintile is increasing in use, probably because of the finer distinctions of which the more numerous divisions permit.

SECTION 3

STUDIES OF COMPARISON

Definition. Under the head of comparative studies we include those whose principal aim has been to compare the attainments of different groups of pupils as evidenced by their school marks. The significant feature here is the comparison of the records of one group of students with those of another group, rather than to compare the same group's records made under different circumstances, as in the continuity studies. No uniform methodology has been worked out for studies of comparison, and considerable variation appears in consequence. The following paragraphs record only the most common methods.

Methods. Steps 1 to 6 in methods of comparison may be borrowed directly from the corresponding steps described under methods of continuity.

7. Comparisons may be based directly upon accumulated marks. Where this method is used, it is necessary to put into comparable form marks earned by each of the groups of students whose efficiency is to be compared. For this purpose one may adopt any of the following devices:

(a) Total the marks of each denomination, or their numerical equivalents. That is to say, bring together all of the A's, B's, or other marks earned by each group of students to be compared. Here, again, one encounters the problem of the different marking stand-

ards held by different teachers, and the warnings given above must be respected.

(b) If the differences between the groups that are to be compared are pronounced, and if no precise statement of the amount of these differences is desired, one may next simply plot curves to show the distribution of marks in each of the student groups.²² Directions for plotting these curves have already been given in Step 3 of Section 1.

(c) If, however, the investigator wishes to make a precise statement of the amounts of the differences obtaining between the various student groups, another method must be adopted. Here may be used any of the established statistical modes of stating central tendencies and variations. These methods have already been described and discussed too widely to need extensive treatment in this place.

(8). Step 8 should be entirely substituted for Step 7 when the ranking plan is to be used for purposes of comparison. This plan should generally be substituted for the simpler one based upon absolute marks, when schools with different marking systems are involved in the same study. The methods to be pursued in the ranking process are similar to those described in Step 8 of Section 2. It has been customary to follow this ranking by a division of each ranked series into tertiles, for each comparative group and in each school, as in the studies of continuity.²³ The tertile positions of the different members of each comparative group may then be assembled, and rough comparisons made upon the basis of these totals. No precise method for stating this comparison has yet been devised.

²²Johnson, F. W. A study of high-school grades. *School Review*, Vol. 19, 13-24.

²³See Shallies, G. W. Op. cit.; Mitchell, H. E. Distribution of high-school graduates in Iowa. *School Review*, Vol. 22, 82-91. Pittenger, B. F. Distribution of high-school graduates in five North Central states. *School and Society*, Vol. 3, 901-907.

CHAPTER II

RESULTS OF EARLIER STUDIES CONCERNED WITH AGE AT ENTRANCE AND WITH SIZE OF HIGH SCHOOL

In the foregoing chapter the writer has attempted to arrange and criticize the various methods used in earlier studies dealing with school and college marks. Such a critique is necessary, since we propose to utilize similar materials. But there is another group of studies which demands consideration here because, while based upon different materials, it is directed toward problems similar to those raised in this investigation. However, it is the results and not the methods of these studies which are of interest at this point.

SECTION 1

STUDIES CONCERNED WITH AGE AT ENTRANCE INTO THE ELEMENTARY SCHOOL

One of the first books bearing even indirectly upon this question was published by C. H. Keyes¹ in 1911. Keyes studied the influence of several different factors, one of which was age at entrance, upon the rate and consistency of progress through the grades. The question of efficiency as displayed by marks or other qualitative symbols was not raised. The influence exerted by age at entrance upon grade progress is shown in the following quotations:

“Practically all children who begin the first grade after reaching their seventh birthday, or before reaching their fifth, may be expected to lose a year during some part of their grammar-school course.”

“Of all who enter the first grade under five years of age only one in nine gains a grade during the course. Of those who enter during their fifth year, one in four makes such a gain; while more than one in every three who enter after reaching their sixth birthday gain a year at some time during the course.” But “this does not mean that there is no gain in starting children to school at an early age if they are psychologically fit,” inasmuch as “60 percent of the early entrants preserve the advantage of the year over the average child.” The loss found among the early entrants is thus assumed to be due to the presence of undeveloped children.

¹Keyes, C. H. *Progress through the Grades of City Schools*. Teachers College Contributions to Education. No. 42. N. Y., 1911.

“Arrest is most likely to follow too early or too late entrance to school. Fifty percent of all children who enter grade one before the age of five years meet arrest at some place in the course; likewise 46 percent of those entering between seven and seven and one-half years, and 49 percent of all entrants over seven and one-half years, become arrests.”

The general outcome of this investigation is to establish six and seven as the best ages for entrance into elementary school, with distinct preference for the age of six.

The second investigation of this character² was published by W. H. Winch, in 1911. Winch's study was conducted in the elementary schools of England where entrance conditions are very different from those in America; but, because it deals with earlier ages than are comprised in the American studies, it may be reviewed with some care.

In England, children may enter school at three years of age, and must enter at five. While some enter a few months after five, the great majority of entries are distributed indiscriminately between these ages. Winch sought to discover the correlation between different portions of this two-year entrance period, and school efficiency.

Two measures of school efficiency were adopted; one called the “progress mark,” and the other a scholarship mark based upon the Head-Master's examinations in the later “Standards” (grades). The second of these criteria is easily comprehended, but the first requires some explanation. The grades of the English elementary school range from Standard I to Standard VII, being preceded generally by a short term in the infant school. It is age of entrance in the infant school with which Winch is concerned. The accepted age for beginning Standard I is 6 years and 6 months, and for beginning Standard VII is 12 years and 6 months. Many students are two years behind this program in the latter end of this course, and but few are slower than that; “so,” says Winch, “I took the pupil who was two years behind as being credited with 0 progress marks, and those who were more than two years behind received a negative mark. The ages of the children were calculated in months, so that a boy two years and one month behind would receive a negative mark of one. If he were one year and eleven months behind he

²Winch, W. H. *When Should a Child Enter School?* Baltimore, 1911.

would, of course, receive a positive mark of one; if he were just right his mark would be 24; and if he were one year ahead of the normal age . . . he would receive a positive mark of 36." Hence "we have merely to take the age in years and months when he entered his present standard, and add to, or subtract from 24, the months by which he is in advance of, or behind the normal age" (pp. 10-11).

"If now we collect the progress marks of all children who entered between 3 and 3½ years of age, and of all those who entered between 3½ and 4 years, and so on, we ought to see at a glance whether there is any marked correlation between age of entry and subsequent progress in school." Two sample tables from Winch's results are given herewith.

SCHOOL "G"—BOYS

Age of Entry	Number Pupils	Av. Prog. Mark per Pupil	Av. Exam. Mark (Max. 10)	Pearson Coefficient (Age with Prog.)	Probable Error
3-3½	12	20.6	7.5	-.1727	.09
3½-4	7	19.4	7.2		
4-4½	8	21.6	7.9		
4½-5	16	19.0	7.9		
5-5½	12	15.4	7.7		
5½-6	2	17.0	..		

SCHOOL "G"—GIRLS

3-3½	7	19.0	7.9	-.0116	.08
3½-4	4	20.7	8.2		
4-4½	15	20.8	7.0		
4½-5	10	20.5	7.8		
5-5½	25	19.3	8.2		
5½-6	..	..	..

Tables corresponding to these two, and displaying very similar tendencies, are presented for eight boys' schools and three girls' schools, after which the author writes:

"I think we may fairly conclude that, so far as intellectual results are concerned, and in so far as these are measured by school progress, we can claim no advantage for early entry into school; that is, children who enter at three years of age progress neither more rapidly nor more decisively than those who enter at five. I do not consider that the evidence is satisfactory for entrance ages beyond five years, as the numbers are small. . . I conclude, however, with confidence that, as far as subsequent school progress is concerned, it is of trifling importance, if not absolutely unimportant, whether a child begins school at three or at five years of age" (p. 38).

The other significant conclusions reached after an elaborate analysis, are:

(1) "That children who come from very poor homes, that is, from homes in which there is no adequate supervision for the young child, are smaller in number than is generally supposed; and that even under present conditions, such children commence to attend school not at one special age, but fairly evenly, in the same proportions as other children, between the ages of three to five and one-half years. But not quite evenly: there is some positive correlation between poor homes and early entry." (2) "No advantage appears to exist in early entry so far as the subsequent attainment of good behavior and the development of attentiveness are concerned."

The conclusions of this rather extensive and elaborate investigation are thus chiefly negative in character: the chief point of a positive nature is that children who enter school much before five afterward lose sufficient time so that they arrive at the end of their course at practically the same age as the five-year-old entrants.

The third paper of the series now under discussion was brought out by Ayres,³ in 1912. Three separate studies are combined in this report, from which we will quote what bears on our problem.

"In 1908, the writer conducted an investigation for the Board of Education of New York City, in which a study was made of . . . a group of 257 pupils in the eight grades, who were about to graduate, and whose entire school histories from the date of first entering were intact and available. The number of children in each entering age-group and the time taken to complete the course were as follows:—

Age at Entrance	Number of Children	Av. Years to Complete Eight Grades
5.....	64.....	8.9
6.....	113.....	8.6
7.....	54.....	8.4
8.....	19.....	8.2
9.....	7.....	7.2

"The figures show a steady but slight falling off in the amount of time required by the children of each advancing age-group to complete the course. This decrease is so small that it lends no support whatever to the prevalent opinion that the child entering school late will make such rapid progress as easily to catch up with the children who entered two or three years earlier."

The second of Ayres' studies was also made with New York City children, comprising 11,185 cases, in 1909. The tabulated data for these children follow:

³Ayres, L. P. *The Relation Between Entering Age and Subsequent Progress Among School Children.* Bulletin No. 112, Division of Education, Russell Sage Foundation, 1912.

Age at Entrance	Number of Children	Median Years to Complete Eight Grades
5.....	1521.....	8.2
6.....	5828.....	8.1
7.....	2936.....	8.0
8.....	721.....	7.9
9.....	142.....	7.4
10.....	26.....	6.9
11.....	9.....	6.6
12.....	2.....	6.3

“These figures again expose the fallacy of the common assertion that the child entering late easily catches up with the one who begins early.”

The third set of data is still more significant. This material was collected through the Division of Education of the Russell Sage Foundation, and comprised 13,867 cases, from the schools of 29 cities. The tabulated data follow:

Age at Entrance	Number of Children	Median Years to Complete Eight Grades
5.....	2663.....	8.7
6.....	6050.....	8.5
7.....	3653.....	8.2
8.....	1151.....	7.8
9.....	255.....	7.2
10.....	58.....	6.3
11.....	22.....	
12.....	9.....	
13.....	3.....	
14.....	4.....	

“These figures closely resemble the two foregoing series. They show that the children who enter school at advanced ages gain a little on those who enter early, and that this gain becomes greater as the upper ages are reached. They again show that this gain is not enough to enable the late entering child to catch up with the one who enters early.”

After this discussion, the author proceeds to select the most auspicious entrance age. With the group of records from the 29 cities, “a division into three progress groups was made in which those pupils who had taken more than eight years to complete the eight grades were designated as slow, those who had taken just eight years as normal, and those getting through in less than eight years were termed rapid. The children of each entering age were divided among these three progress groups as follows:

Age at Entrance	Percent Rapid	Percent Normal	Percent Slow
5.....	10.....	58.....	32
6.....	27.....	52.....	21
7.....	40.....	45.....	15
8.....	59.....	33.....	8
9.....	81.....	17.....	2
10.....	98.....	2.....	..
11.....	100.....	..	..
12.....	100.....	..	..
13.....	100.....	..	..
14.....	100.....	..	..

“Is the best entering age the one which results in the greatest proportion of rapid pupils, the smallest proportion of slow pupils, the largest proportion of normal pupils, or the most equal balance between these three groups? The writer is inclined to the opinion that . . . the best entering age is the one that results in a large proportion of normal pupils, combined with the most equal balance between the rapid and slow groups. In the present case this is the entering age of six.”

This table is checked by comparison with another “which considers a fourteen-year-old child in the eighth grade as of normal age, one younger as below normal age, and one older as above normal age.”

Age at Entrance	Percent Young	Percent Normal	Percent Over-age
5.....	67.....	25.....	8
6.....	27.....	52.....	21
7.....	8.....	33.....	59
8.....	3.....	14.....	83
9.....	2.....	7.....	91
10.....	2.....	10.....	88
11.....	..	5.....	95
12.....	..	..	100
13.....	..	..	100
14.....	..	..	100

This table resembles the preceding “in that the entering age of six is the one which results in combining the greatest proportion of normal pupils with the most equal balance between the young and over-age groups.” These results are further substantiated by finding that the six-year-old entrants graduate most nearly on normal time, and that this group shows the greatest homogeneity in its progress rate.

Ayres concludes that, using rate of progress through the grades as the criterion, late entrants, while progressing more rapidly than

early entrants, do not generally overtake them; and that "the entrance age of six is the one which makes the best showing with respect to resulting in the largest number of the children finishing the course at normal age," and with respect to furnishing "the most homogeneous group, judged on the basis of subsequent progress."

SECTION 2

STUDIES CONCERNED WITH AGE AT ENTRANCE INTO THE HIGH SCHOOL

In a little volume entitled *The High School Age*, Irving King⁴ devotes a chapter to the further elaboration of earlier studies made by Van Denburg⁵ and Dynes,⁶ in so far as they dealt with age at entrance. He seeks first to "gain some idea of the probable ability, at the time of entering high school, of high-school boys and girls as compared with school children in general." The median age of high-school entrance as found by Dynes was 14.9, by Van Denburg 14.5; "that is, one-half of all the pupils studied in these two cities (Iowa City and New York) entered before fifteen." "In Iowa City the children entering the elementary school probably average six years of age. In New York City the average age of entrance is given as seven. If these Iowa City children are regularly promoted they finish the elementary course in eight years, or at the end of the fourteenth year. Similarly, New York City children would normally finish the elementary schools at the end of the fifteenth year. If, then, more than half of those entering the high school enter earlier than the above ages, they have at one or more points in their elementary school work skipped grades or gained special promotions. Every such incident in the life of a child is an indication that he has possessed, at one time or another, more than average ability Then, while about *one in every twenty-three of elementary-school children* gain special promotions, *one in three of those who come to the high schools* have apparently gained such promotions." The natural conclusion is that high-school entrants are a highly selected group. Confirmation of this inference is found in Dearborn's in-

⁴King, Irving. *The High School Age*. Bobbs Merrill Co., Indianapolis, 1914.

⁵Van Denberg, J. K. *The Elimination of Pupils in Public Secondary Schools*: Teachers College Contributions to Education, No. 47.

⁶Dynes, J. J. Study unpublished.

vestigation into qualitative elimination in the elementary school.⁷

The second question raised by King is as to the "relation between entering age and the pupil's likelihood of finishing his course." This question is answered in the form of a table.

Table Showing in Percents the Comparative Graduation Expectancy of the Various Entering ages (After King)

Ages	Iowa City	New York City
12-13.....	.65.....	.23.0
13-14.....	.50.....	.19.0
14-15.....	.39.....	.10.0
15-16.....	.29.....	.6.5
16-17.....	.17.....	.3.5

This table is followed by the remark: "We may say with Van Denburg that, 'as far as age is concerned, thirteen is the ideal age for high school entrance,' or even between twelve and thirteen." It seems unnecessary to elaborate upon the fallacy of this remark, in view of the other conclusion just quoted—that high-school pupils, particularly the early entrants, are a selected group. The table gives an acceptable indication of what happens to those pupils who now enter the high school at twelve or thirteen; but it gives no indication at all of what would occur if all pupils were to enter at those ages.

The third problem raised by King concerns the relation between entering age and subsequent high-school scholarship. This question is answered indirectly, by ascertaining that the graduates, upon the whole, do work which is very superior to that of the non-graduates. When this fact is coupled with the earlier-mentioned fact that there is a high correlation between graduation expectancy and early entrance age, there is inferred a similar correlation between efficiency in scholarship and early entrance age.

We may conclude our summary of King's discussion with the remark that it seems singularly unfortunate that no discrimination between the sexes has been attempted, during this period when sex-differences might be expected to be paramount.

A recent development in discussions relating to the ages of high-

⁷Dearborn, W. F. Qualitative elimination from school. *Elementary School Teacher*, Vol. 10, 1-13.

school (and grammar-school) pupils is to emphasize anatomical or physiological rather than chronological age.⁸ "The term anatomical or physiological age refers to the stage of development in contradistinction to chronological age in years and months, which is our usual method of age designation." Various methods of determining physiological age have been adopted; King used the personal judgments of teachers and principals, and Crampton used the appearance of the teeth and the onset of puberty, as shown by menstruation or the appearance of pubic hair. In general, three periods of development are recognized; the pre-pubescent, pubescent, and post-pubescent (Crampton), or the immature, the maturing, and the matured (King). From the records of 4,800 boys in New York City high schools, Crampton finds the relations between anatomical and chronological age shown in the accompanying table.

Chronological vs. Anatomical Age

Chronological Age	Anatomical Age		
	Percent Pre-Pubescent	Percent Pubescent	Percent Post-Pubescent
12.5-13	69%	25%	6%
13-13.5	55	26	18
13.5-14	41	28	31
14-14.5	26	28	46
14.5-15	16	24	60
15-15.5	9	20	70
15.5-16	5	10	85
16-16.5	2	4	93
16.5-17	1	4	95
17-17.5	0	2	98
17.5-18	0	0	100

Regarding the peculiarities of these developmental periods, Crampton tells us that "at characteristic ages, the mature are more

⁸In connection with the topic of physiological age the reader may note the following:

Crampton, C. W. The Influence of physiological age upon scholarship. *Psychological Clinic*, Vol. I, 115-120.

Crampton, C. W. Anatomical or physiological vs. chronological age. *Ped. Sem.*, Vol. 15, 230-237.

Foster, W. L. Physiological age as a basis for the classification of pupils entering high school. *Psychological Clinic*, vol. 4, 85-88.

King, Irving. Physiological age and school standing. *Psychological Clinic*, Vol. 7, 222-229. See also *The High School Age*.

than 33 percent heavier, ten percent taller, and 33 percent stronger than the immature," and that "the immature boys of all ages fail to pass the work of any grade much more than those who are mature." As has been pointed out by Whipple,⁹ this last statement is contradicted by Foster, who found that, of 58 failures, 40 were in the most mature groups, while, of 179 promotions, 100 were in the least mature groups. As Whipple says, more investigation of this point is needed.

King offers considerable evidence to show that "children of early or normal development in every case can do better work [in school] than those who are somewhat later, if not retarded, in their development." Crampton states that "a preliminary investigation shows that in the fifth, sixth, and seventh years in the elementary schools in New York City, the poor scholars are on the average of 37, 40, and 46 percent more advanced in maturity than the good scholars," but asserts that "this is quite contrary to the condition shown in high schools." The evidence for the latter part of this statement is not given, but the difference would appear to be correlated with the retention of the over-age and poor pupils in the elementary school, and the promotion of the brighter, but earlier maturing pupils into the high school.

In practically all of the studies quoted above, boys have been the sole objects of attention, owing to the greater difficulty experienced in obtaining reliable data relating to the pubescent development of girls. King's work is an exception.

The full bearing of this matter of maturity of development upon the question of high-school-entrance age is not yet clear. One fact alone stands out; *i. e.*, that these differences in maturity are far more pronounced and important during the freshman year than later, when elimination and increase in age have reduced them. It also seems probable that a large proportion of those who enter the high school at an early age are mature pupils; and that the superior ability which appears to be correlated with this early maturity is in part responsible for the better grades and greater persistency displayed by this group. However, at present we can say with cer-

⁹Whipple, G. M. *Psychology and Hygiene of Adolescence*, in Monroe's *Principles of Secondary Education*, Macmillan Company, N. Y., 1914. Ch. VII.

tainty that the problems affecting high-school-entrance ages are closely bound up with these problems of comparative development, and that simple chronological age is a very inadequate criterion of readiness to enter the high school.

SECTION 3

STUDIES CONCERNED WITH AGE AT ENTRANCE INTO COLLEGE

No investigations have come to the author's notice which bear directly upon problems of age and college entrance. The nearest approach is in a one-page report by Forsyth¹⁰ of the correlation existing between the ages of college students and their marks. The study included 1,306 men students and 644 women students of the University of Illinois, for the school year 1909-10. The men showed a Pearson coefficient of 0.0938, P. E., 0.0685; and the women a coefficient of 0.1996, P. E., 0.0360. "The results indicate that, on the average, age has a little, but a very little favorable effect on scholarship. . . . Both coefficients, though small, are well beyond the probable error. . . . The coefficient for the women has more than twice the value of the one for the men."

SECTION 4

STUDIES CONCERNED WITH SIZE OF HIGH SCHOOL

Thorndike¹¹ issued in 1907 the first study dealing with the size of American high schools, as measured by number of teachers employed and pupils enrolled. The data refer to conditions in 1904. The tables herewith are copied or adapted from this report:

Table Showing Number and Percentage of High Schools Employing Different Numbers of Teachers in 1904. (Adapted from Thorndike)

No. Teachers	No. Schools	Percentage Schools
1.....	2175.....	30
2.....	1807.....	25
3.....	1221.....	17
4.....	640.....	9
5.....	380.....	5

¹⁰Forsyth, C. H. Correlation between ages and grades. *Journal of Educational Psychology*, Vol. 3, 164.

¹¹Thorndike, E. L. A Neglected Aspect of the American High School. *Educational Review*, Vol. 33, 245-255. See also Strayer and Thorndike, *Educational Administration*, Macmillan, 1913, 165-175.

1-5.....	6223.....	86
6.....	208	
7.....	172	
8.....	87	
9.....	74	
10.....	48	
5-10.....	588.....	8
11-15.....	165.....	2
16-20.....	78	
21-25.....	63	
26-30.....	27	
31-35.....	14	
36-40.....	13	
41-50.....	9.....	4
51-60.....	8	
61-70.....	4	
71-80.....	3	
81-90.....	2	
91-100.....	0	
101-110.....	2	

Table Showing Percentages of High-School Pupils in Different Sized Schools, in 1904. (After Thorndike)

In schools of	1-3 teachers are	36.6%	of public high-school pupils
” ” ” 4-6	” ”	22.1	” ” ” ”
” ” ” 7-10	” ”	9.1	” ” ” ”
” ” ” 11-20	” ”	13.5	” ” ” ”
” ” ” 21-30	” ”	7.7	” ” ” ”
” ” ” 31-40	” ”	3.6	” ” ” ”
” ” ” 41-50	” ”	2.0	” ” ” ”
” ” ” 51-110	” ”	4.5	” ” ” ”

Thorndike concludes: “The most typical, in the sense of the most frequent, secondary school in the United States is a school taught by one teacher. The secondary schools in the country with only one teacher outnumber by a considerable figure all the rest. Those with one, two, or three teachers are ten times as frequent as those with ten or more teachers and five times as frequent as those with from five up to ten teachers. . . . The frequency of the schools of small teaching force is so much greater that in spite of the large registration of city high schools there are more pupils in the two-teacher high schools than in any other one group . . . and more in schools with three teachers or fewer than in schools of from five to thirteen teachers, and nearly, if not quite, as many as in schools of fifteen or more teachers. These facts show that the high school is . . . an institution of enormous variability as regards its capacity for educational work and its administrative and educational arrangements. This variability has never been fully realized in the discussions of secondary school problems. The recommendations made are often utterly impossible of realization by the village high school and decidedly unwise for the unlimited possibility high school. The rule must in the nature of the case be that what is best for any one-fifth of high-school effort is not the best for any other fifth.”

In a study embracing 46 high schools and 36,276 pupils from different parts of the United States, Rounds and Kingsbury¹² have suggested some correlation between the size of school and the quantity of promotions in English and mathematics, as in the following table:

High School Enrolment	Percent passing in	
	English	Mathematics
Less than 400	82.10.....	75.55
From 400 to 800	80.62.....	74.72
More than 800	83.23.....	75.73

These writers find, however, great variation among the school of each of these groups; so great, in fact, that the small differences in central tendencies deserve to be given little weight.

Two intensive analyses of the high school of the North Central Association have recently appeared. The first of these was compiled by Jessup and Coffman,¹³ the second by Counts.¹⁴ As the second supersedes the first, and as the methods pursued were very similar, we shall confine our review to the latter. Counts treats the size of 1,000 selected high schools as indicated in two ways; by the number of students enrolled, and by the population of the town in which each school is located. The towns are grouped in seven groups, with the following respective populations: under 2,500; 2,501-5,000; 5,001-7,500; 7,501-10,000; 10,001-15,000; 15,0001-50,000; above 50,000. As to enrolment, the schools are grouped under six heads, as follows: 1-100, 101-200, 201-300, 301-500, 501-1,000, above 1,000.

In the first of the accompanying tables, both of which are compiled from Counts' results, is given a summary of the characteristics found to mark the schools in towns and cities of the different sizes described in terms of the median school of each size. But as Counts wisely observes, the median alone is not entirely trustworthy in describing a large, and particularly a varying group. Consequently,

¹²Rounds, C. R., and Kingsbury, H. B. Do too many students fail? *School Review*, Vol. 21, 585-597.

¹³Jessup, W. A., and Coffman, L. D. *North Central High Schools*. National Society for the Study of Education. Thirteenth Yearbook. P. S. Publishing Company, Bloomington, Ill.

¹⁴Judd, C. H., and Counts, G. S. Study of the colleges and high schools of the North Central Association. *Bulletin, United States Bureau of Education*, 1915, No. 6.

we shall accompany the table by a brief verbal summary designed to supplement the evidence of the medians. The second table will be similarly supplemented.

Table Showing Characteristics of High Schools in Cities of Different Populations (After Counts)

Characteristic of median schools in cities of population of							
	2,500 or less	2,501- 5,000	5,001- 7,500	7,501- 10,000	10,001- 15,000	15,001- 50,000	50,000 and more
Enrolment.....	126	176	210	273	335	459	742
No. pupils per teacher.....	17	19	20	20	21	21	23
No. teachers per school.....	8	9	11	13	15	22	33
Percent teachers inexperienced...	30.7	30.2	22.2	28.7	19.9	16.9	9.7
Percent new teach- ers untrained...	8.9	7.7	6.8	7.8	7.8	10.1	10.6
Percent old teach- ers untrained...	4.8	7.4	5.2	7.0	4.9	6.1	8.2
Salary, teachers...	\$ 723	\$ 765	\$ 793	\$ 861	\$ 906	\$ 970	\$1381
Salary, prin.....	1058	1140	1292	1445	1587	2005	3014
Salary, supts.....	1628	1750	1950	2000	2290	2700	....
Percent of gradu- ates who enter college.....	22.3	22.3	27.4	29.7	29.8	26.0	36.3
Percent graduates who go into teaching.....	9.1	5.9	3.9	3.4	2.0	2.3	0.6
Percent of total units of work de- voted to English	14.3	14.2	13.6	12.8	12.1	12.0	11.1
Percent to Latin..	11.8	12.7	12.6	11.7	11.4	10.5	9.1
Percent to Mod. Language.....	8.6	9.0	9.3	10.0	9.7	10.2	14.8
Percent to Science.	11.7	11.8	12.0	11.6	11.7	11.6	11.5
Percent to Mathematics....	10.8	10.8	10.6	9.9	9.2	8.8	8.6
Percent to Hist., Civics.....	11.6	11.5	11.7	11.3	10.5	10.4	9.3
Percent to Tech. Subjects.....	22.2	23.7	24.5	26.8	29.5	32.1	29.8
Percent to Commerce.....	6.8	8.1	10.0	10.3	10.4	13.9	7.2

This table affords data which bear out the following statements:

1. The number of pupils enroled in high school increases with the increase in city population, "but it is an interesting fact . . . that, while the large schools are with hardly an exception, found in the larger cities, the small schools are by no means confined to the small cities. The range of variation in size of schools increases with the size of the cities" (p. 39).

2. The number of teachers per school does not increase proportionally to the increase in enrolment. Consequently, the ratio of pupils to teachers is higher in the larger than in the smaller towns.

3. Schools in smaller towns and cities are forced to accept an undue proportion of inexperienced teachers.

4. The salaries paid to teachers in cities of different sizes seem to parallel in amount the experience of the teachers and the number of pupils whom they must supervise.

5. "The salaries of principals increase with the increase in the size of cities much more rapidly than do the salaries of teachers; and the salaries of superintendents increase in about the same fashion as the salaries of principals. These facts would indicate that the need for efficient administrators and supervisors becomes increasingly apparent as the cities increase in size, while there is no corresponding change in the demands upon classroom teachers."

6. The larger the city, the larger the proportion of its high-school graduates who enter colleges and normal schools, or who take up business pursuits, professional preparation, or the trades; and the smaller the proportion who enter commercial schools, immediate teaching, farming, and other callings.

7. The larger the city, in general, the less the proportionate amount of school effort which is given to English, Latin, mathematics, history and civics; and the greater the proportionate amount devoted to modern languages, and technical and commercial subjects.

We now pass to the second table.

Table Showing Characteristics of Median School Among Groups of Schools with Varying Enrolments (After Counts)

Characteristics of median of schools enrolling						
	1-100	101-200	201-300	301-500	501-1,000	1,000+
No. pupils per class.....	12.5	17	19.5	21	22	24
No. pupils per teacher.....	11	18	21	22	22	26
Periods taught						
by supt.....	1	1	0	0	0	0
by prin.....	4	4	3	2	0	0
by teacher.....	4	5	5	5	5	5
Study periods supervised.....	0	4	5	6	8	13
Value of lab. equipment.....	\$2085	\$1985	\$2600	\$3875	\$6565	\$10,755
No. vols. in library.....	550	535	658	818	1288	2241
Amt. spent for books annually....	87	86	97	112	145	263
Percent of total units of work devoted						
to English.....	15.3	14.5	13.1	12.0	10.7	10.0
to Latin.....	13.0	12.6	11.9	11.0	9.4	7.9
to Mod. Lang.....	12.8	9.3	8.9	9.8	11.7	12.5
to Science.....	11.2	11.9	11.5	11.4	11.8	11.9
to Mathematics....	12.2	11.0	9.8	9.2	8.2	7.8
to Hist. and Civ..	12.2	12.0	11.3	10.3	9.6	8.2
to Tech. Subjs....	18.5	21.9	27.2	30.1	33.3	35.6
to Commerce.....	5.6	7.4	10.4	11.4	11.9	8.7

From this table and from the data from which it is drawn, we submit these conclusions and comments:

1. The size of class, and the ratio of pupils per teacher, increase with the increase in high-school enrolment. This fact, we think, has a most significant bearing upon existing studies,¹⁵ which tend to show that size of class is of comparatively small importance in determining school efficiency. These studies, we believe, by failing to consider separately schools of different sizes, have admitted as a complicating factor the superior facilities of the larger schools which tend to offset the effect of the larger classes obtaining in these schools. Obviously, studies of the effect of size of class upon scholarship can have weight only when classes of different size in

¹⁵Harlan, C. L. Size of class as a factor in schoolroom efficiency. *Educational Administration and Supervision*, Vol. 1, 195-214.

schools of the same approximate size have been considered. In the study which follows, this problem will be attacked.

2. The larger schools demand the whole time of their principals and superintendents for supervisory and administrative functions, and make correspondingly larger demands upon their classroom instructors.

3. Supervision of study is practically ignored in the smaller schools.

4. The larger the school, the better the laboratory and library facilities.

5. The proportion of attention paid to the different subjects of instruction varies among high schools of different size as among cities of different size. The smaller schools still give the greater attention to the traditional subjects.

Counts remarks in another connection that "there seems to be greater tendency for students to leave school in the larger cities than in the smaller cities."

CHAPTER III

MATERIALS AND METHODS

The problems raised in this investigation have already been stated, but it is desirable at this point to recall them to the reader's attention. To determine the influence exercised upon the efficiency of a college student by the age at which he enters college, and by the general character of the high school from which he comes; that is our task. Two features constitute college efficiency in the meaning of the present study; first, the student's standing in his work, and second, his persistence in pursuing his course to the end.

Before undertaking to present the results of our inquiry into the influence exercised upon retention and scholarship by each of the factors named, attention must be called to the materials upon which these conclusions are founded and the methods by which they have been reached. A discussion of these matters constitutes the theme of the present chapter.

SECTION 1

MATERIALS

1. *Fundamental Materials.* The original data upon which the investigation is based were drawn from the registrar's records of two different classes entering the College of Science, Literature, and the Arts at the University of Minnesota in 1910 and 1911. These classes include a total of 828 students, distributed as follows:

Class	Males	Females	Total
1910.....	140.....	244.....	384
1911.....	189.....	255.....	444
Total.....	329.....	499.....	828

Both classes were traced throughout the four-year college course. These registrar's records also furnish the necessary data regarding the sex of the students, their comparative achievements in scholarship, and the lengths of their college careers.

2. *Accessory Materials.* Other sources of information were turned to for the data regarding the size, in number of pupils and teachers, of the various high schools, and for the high-school scholarship of the students under consideration. The uses made of these data will appear in our discussion of methods.

The reports of the state high-school inspector furnished the necessary information regarding the high schools of Minnesota, and a circular letter was sent to each of the superintendents of the schools involved outside the state, asking for similar information regarding his schools and teachers. In every case the data were secured for the particular year in which the students under consideration were graduated from each school.

There was also required a statement of the quality of the work done in the high school by each of the college students recorded, as compared with that done by his high-school classmates. Blanks were accordingly sent to each high school, both in and out of the state, requesting a summary of the marks earned during the senior year by all of the members of every graduating class which had sent one or more students to the Arts College of the University of Minnesota during the period under consideration. This request was restricted to the senior year of the high-school course because the scholarship shown during the last year probably would be more nearly typical of the settled achievement of each student than would that shown during the earlier pubescent years. Furthermore, different investigators have shown that a considerable degree of continuity exists between the scholarship rank of a pupil during one high-school year and his rank in preceding and succeeding years.¹

3. *Evaluation of Materials.* Any attempt at original investigation must carefully weigh the materials upon which its conclusions are founded, as to (a) their accuracy, (b) their adequacy, and (c) their deeper implications.

(a) *Accuracy.* There is no reason to question the accuracy of the materials of the present study. The registrar's records, both of the University and the high schools, are official records, and are as reliable as such records anywhere. The supplementary question-

¹See Chapter I, Section 2.

naires dealt with matters of recorded fact rather than with matters of opinion, and should be correspondingly dependable.

(b) *Adequacy.* The different kinds of materials which it was necessary to collect could not be made uniformly adequate. The number of students for whom the college records were obtained is unusually large, so that no apology need be made for the quantity of original data. The data regarding size of high school and number of teachers per school have been made practically complete. But it was found impossible to make the collection of high-school scholarship records equally complete. We are able to present these standings for only 288 out of the 828 students whose college records were compiled. To secure even this number, the records of 3,644 high-school graduates had to be obtained. With the possible exception, then, of these high-school scholarship records, the data in all cases seem sufficient in quantity to justify the conclusions based upon them.

(c) *Implications.* We now turn to the problem of the deeper significance of these materials. If teachers' marks are as unreliable as many studies of them would imply, and if we are uncertain of the causes which determine their quality, how is it possible to use them as the basis of a study which seeks scientific validity? In reply we may say that there is a quantity of evidence to show that marks taken in sufficient numbers may be safely utilized. Several studies of the distribution of school marks² indicate that the composite curve representing thousands of marks conforms within a reasonable degree of variation to the normal or binomial curve. For this reason it has been held that such masses of marks portray with considerable accuracy some biological function. Again, a continuity has been shown to exist between the rank held by a student in the high school and the position which he later occupies in the college. A similar continuity between rank in the elementary school and the high school, and in the grammar school, the high school, and the college, has been established.³ As the positions of these students were in every case determined upon the basis of school marks, the implication is that a continuity exists among the marks themselves which

²See Chapter I, Section 1.

³See Chapter I, Section 2.

can hardly be the product of accident. A third thread of evidence is found in the fact that a student who ranks high in one line of school activity is very likely to rank high in other lines.⁴ Here, again, all of the rankings have been based upon school and college marks, and the same implications must follow regarding the reliability of these marks when taken in sufficient numbers. The statistical usefulness of a body of material does not require that we know at the beginning the laws operating within the material, but simply that we have reason to suppose that it does follow some law. The gist of this accumulated evidence is that, whatever may be the causes determining the quality of school marks, these marks are sufficiently reliable for statistical purposes if there be enough of them.

The present study embraces more than 20,000 college scholarship marks, by actual count, and almost an equal number, estimated, of high-school marks. Table I and Graph I show the form of the distribution of the college scholarship marks. The curves for both sexes are skewed strongly toward the high end of the marking scale, but the females, upon the whole, earned considerably the better marks.

TABLE I

Showing the Distribution of 20,090 College Scholarship Marks for Both Sexes and for Each of the Four College Years

	Excellent	Good	Passed	Condition	Failed
Freshmen					
Males: Number.....	333	890	840	297	313
Percent.....	12.4	33.3	31.4	11.1	11.7
Females: Number.....	852	1578	1216	240	180
Percent.....	20.9	38.5	29.9	5.9	4.8
Sophomores					
Males: Number.....	249	661	632	182	171
Percent.....	13.1	34.8	33.3	9.6	9.0
Females: Number.....	856	1680	1058	232	82
Percent.....	21.8	42.9	27.2	5.9	2.2

⁴See Chapter I, Section 2.

Juniors

Males: Number.....	287	526	310	76	35
Percent.....	23.2	42.6	25.1	6.2	2.9
Females: Number.....	674	1730	858	128	46
Percent.....	19.6	50.3	25.0	3.7	1.4

Seniors

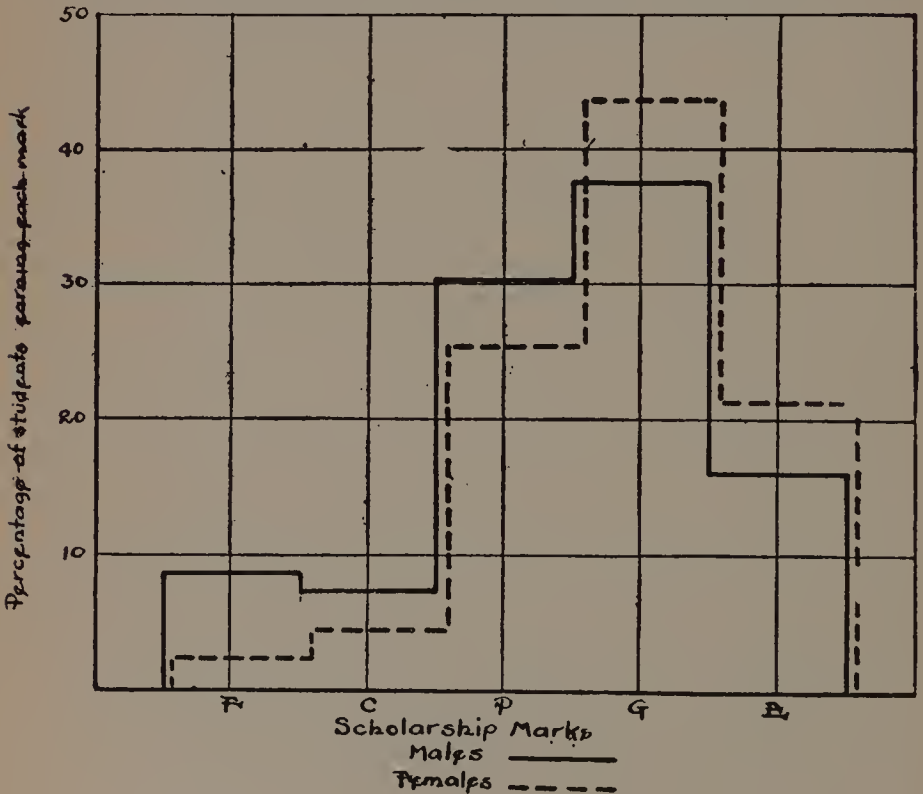
Males: Number.....	132	192	90	14	12
Percent.....	30.0	43.6	20.5	3.2	2.7
Females: Number.....	584	1470	380	28	10
Percent.....	23.6	59.5	15.4	1.1	0.4

All Years

Males: Number.....	1001	2269	1872	569	531
Percent.....	16.0	3.63	29.9	9.1	8.5
Females: Number.....	2966	6458	3512	628	318
Percent.....	21.3	46.5	25.3	4.4	2.5

GRAPH I.

DISTRIBUTION OF 20,090 COLLEGE SCHOLARSHIP MARKS, WITHOUT REFERENCE TO THE COLLEGE YEAR DURING WHICH THE MARKS WERE EARNED.



SECTION 2

METHODS OF STUDYING COLLEGE MATERIALS

1. *General Considerations.* During the early stages of the investigation, each of the two entrance classes, entering in 1910 and 1911, respectively, was studied separately. Each entrance class is logically a sort of competitive group, and the members of classes entering college in different years may not earn their marks under conditions quite identical. However, as this separate treatment of the two classes did not appear to be yielding results commensurate with the time it required, it was discontinued during the later stages.

Throughout the study the two sexes have been treated separately. It may be permissible to combine the sexes in studies having to do with the pre-adolescent period, although the wisdom of such a course is doubtful even then, but in investigations having to do with high-school and college students, such a method is almost sure to lead to serious error. In some of the results here rendered the males and females show considerable uniformity, but in other instances there appear very decided differences.

As has been said, two measures of comparative efficiency are utilized in this investigation. The first is the quality of scholarship shown by the marks each student received; the second is the length of time which each student remained at college work. The methods pursued in the application of each of these measures will now be described.

2. *Methods pursued in ranking students as to scholarship.* Most of the scholarship comparisons have been made by means of the ranking method. This method consisted of five steps: (a) finding the total number of marks of each denomination earned by each student in each year of his college course; (b) ascribing to each mark the numerical value stated in a succeeding paragraph; (c) finding the sum of these numerical equivalents in each pupil's annual record; (d) ranking the students of each entrance age, etc., in order of merit from highest to lowest according to these sums; and (e) finding the median pupil, and the first and third quartile pupils, in the groups representing the different entrance ages, sizes

of high school, etc. The special features of each step are next described.

(a) The marks totaled in the first step were the five marks in use in the College of Science, Literature, and the Arts in the University of Minnesota during the period covered by the investigation: These marks were in the form of letters; E, G, P, C, and F. Of these, E, G, and P represented "excellent", "good", and "passed", respectively; C represented a "condition", which might be removed by special examination or by partial repetition of work; and F represented a complete failure. Only one other mark, that of I, or "incomplete", appeared upon the records. In cases where this mark had not been removed by the later passing of the course it was changed to failure; where it had been removed the student was credited with the mark received on its removal. The term "mark" as here used means one semester's grade in one subject for the college, and one term's grade in one subject, for the high school.

(b) The second step in the process of ranking required the substitution of a numerical value for each of the college marks. The values selected were the following:

F	=	-1
C	=	0
P	=	1
G	=	2
E	=	3

The mark C was given the value of zero because C represents no recognized progress toward graduation; P was given the value plus 1 because it represents one unit of such progress; and F was given the value minus 1 because it must be removed later by the student's retaking and passing the subject in which it was received, or by presenting an acceptable substitute. G was valued at plus 2 and E at plus 3 in order that the distances between the different units might remain uniform.⁵

(c) The procedure in Step 3 was very simple, consisting only in summing up the numerical equivalents for the marks earned by each student during each college year.

⁵The writer acknowledges his indebtedness to an unpublished study by Professor David F. Swenson, of the University of Minnesota, for the numerical equivalents here utilized.

Various eliminations of marks, however, were found to be necessary. Work performed during summer school was not counted. All "no-credit" courses were excluded. Only the first mark given a student in a subject was considered, in all those cases where the subject had been repeated in order to raise the mark first received. In all such cases, except those originally marked "incomplete", no notice was taken of later marks, which were interpreted as concerned with a second set of facts not to be considered here.

(*d*) Step 4 is more intricate and much more difficult to describe. Let us therefore make it concrete. First we separated the data for the entrance classes, and started with the class entering in 1910. This class was then divided into two groups upon the basis of sex. Next, each of these sex groups was divided, upon the basis of age at entrance, or of character of high school. In the former case we would have, for instance, the males and females each brought into groups representing the 17-year-old entrants, the 18-year-old entrants, etc. The members of each of these age-groups were then ranked in order from highest to lowest, according to the sums of the numerical equivalents assigned to the marks of each student. Four separate rankings were thus made for each group, one for each college year.

(*e*) In Step 5, the median pupil was found for each group, for each college year, and the numerical value of the scholarship marks of this pupil was taken as the index of the scholarship of that group for the given college year. Comparison of the scholarship efficiency of the 17-year-old entrants with the 18-year-old entrants, etc., was made by means of these median equivalents. The range of variation in each group was also found in terms of the "middle 50 percent."

This process was repeated for the class entering in 1911. As a result we finally reach a statement of the median scholarship of the students entering at 17, 18, 19, 20, 21, etc., years of age for each sex and each college year, and for each of the two entrance classes. We also have a statement of the range of the middle 50 percent for each of these several groups.

The above procedure was duplicated in studying the scholarship achievements of students entering from the different types of

high schools, except that character of high school, rather than age at entrance was used to determine membership in each comparative group.

3. *Methods pursued in comparing the lengths of the students' college careers.* In general, the different student-groups described above were compared as to the percentage of members eliminated at different stages of the college course, usually at the end of each college year. The number of semesters during which the median member of each group remained in college was also used. All students were regarded as "eliminated" who were dropped from the rolls of the College of Science, Literature, and the Arts before the end of the course, and who did not reappear upon them. Such students as left the college to enrol in some other department of the University of Minnesota, as Law, Medicine, Agriculture, and Engineering, were included among the eliminations, but a statement of their number has been appended. It was found impossible to ascertain the number of those who left the University of Minnesota to enrol in some other institution.

4. *Evaluation of Methods.* Several features of the methods which have just been described may invite criticism.

First, objection is anticipated to the fact that equal weight has been attached to marks of the same denomination, irrespective of the teachers who gave them. The writer is perfectly aware that the marks of the different teachers do not mean the same thing. The G of one teacher is not always equal to the G of another teacher. Some teachers are notoriously high markers, and others are notoriously low markers. But in spite of these admitted differences, the marks of different teachers have been treated as equivalents for several reasons.

In the first place, the data were not accessible which would be necessary if one were to take strict account of teachers' individual differences. The proper procedure, from this point of view, would be to rank the members of each recitation group, under each individual instructor's marks. Later group rankings would then be found by combining the rankings given by the individual instructors. But such a procedure was impractical, in the present instance, because the registrar's records of the university did not take account

of individual teachers. The nearest possible approach would have been to find the rankings in separate subjects, but this would by no means have avoided the difficulty, for usually more than one instructor teaches the same subject.

In the second place, inspection of the data fails to reveal any noticeable correlation between age at entrance or character of high school and the departments in which the students elected to do most of their college work. Nor is there any evident reason for expecting such a correlation. In fact, a thorough study of the freshmen of one entrance class, dealing with the influence of age at entrance upon scholarship in the separate fields of English, mathematics, science, and history, brings out tendencies in each field exactly like those shown when the marks were treated *en masse*.

Finally, the method here employed does not necessarily assume that different teachers mean the same thing by the same mark. What it does assume is that in the long run the low markers and the high markers strike a fairly even balance. The error introduced is of the compensating and not of the cumulating sort. But even if it were assumed that identical scholarship marks possessed identical values, the example of every college and university which requires a student receiving a failure, no matter from what instructor, to repeat his work, and which passes every student marked "passed" and above by any and every teacher, might be pointed to as in a measure justifying that assumption.

The present study has departed from the usual plan of averaging the marks earned by a student during a given year in order to secure a measure of his scholarship. This study substitutes the sum of these marks for their averages. The reason for adopting this procedure is as follows:

The writer wishes to compare the scholarship shown by the different students in all of their work for each college year. He is concerned with their entire college accomplishment on record for each year. He does not wish to enter into the problem of comparative efficiency in different lines of subject matter. If he were to average the marks earned by each student during the whole college year, he would give weight to quality only, and would take no account of differences in the number of courses completed. He would thus put the student who carried two courses upon the same plane with the

one who carried five, provided that the quality of work done in the two cases was the same.

A striking example of this danger came to light in the course of the compilation. Two students were found, whom we may designate as *A* and *B*, each of whom had received a mark of G in rhetoric, German and chemistry. *A* carried only these three subjects; *B* had also entered a course in mathematics from which he emerged with a mark of P. If these marks had been averaged, *B* would have appeared as inferior to *A*, although he had received identical marks in all of the subjects taken by *A*, and had carried and passed one subject more. Clearly, the only way to treat such a situation is to consider both quantity and quality; that is, to total the marks.

However, it may be said that consideration of the averages of the marks in place of their totals would have made no marked change in the results. Inspection of Table 2, which is based upon 95 cases selected so as to represent all degrees of scholastic efficiency, demonstrates that the students who ranked high in the totals also ranked high in the averages; and conversely. Furthermore, the place of each individual in each of the two series is almost identical. The rank-difference coefficients are as follows: males $0.98 \pm .01$; females, $0.96 \pm .01$.

A third possible source of error consists in the fact that equal weight has been given to every mark of the same denomination, regardless of differences in the number of hours per week which the various courses demanded. Thus Rhetoric 1 is a three-credit course, meeting three hours per week, while Mathematics 1 is a five-credit course, meeting five hours per week. Yet the study treats a G earned in Rhetoric 1 as equivalent to a G earned in Mathematics 1.

This is clearly not the perfect procedure, and can be justified only by its economy, and by the fact that the error involved is practically insignificant. Its insignificance is demonstrated in Table 3. This table compares the respective positions of 95 students selected so as to represent all degrees of scholastic efficiency, in two serial orders. The first series for each sex states the sum of the numerical equivalents of the marks earned by each student, before these marks had been weighted to take account of hour-differences. The second series shows the corresponding value for each pupil, when each mark had been weighed according to the number of hours required for the

TABLE 2

A Comparison of Total-Mark Equivalents with Average-Mark Equivalents as Measures of Scholarship During the Freshman College Year

(Only enough cases are given to serve as samples in different ranges.)

Males			Females		
Individual	Totals	Averages	Individual	Totals	Averages
1	-8.0	-1.0	1	-8.0	-1.0
2	-8.0	-8.0	2	-8.0	-1.0
3	-6.0	-1.0	3	-4.0	-1.0
4	-6.0	-0.75	4	0	0
5	-2.0	-0.40	5	2.0	0.25
6	-1.0	-0.20	6	5.0	0.71
7	0	0	7	6.0	0.67
8	0	0	8	7.0	0.875
9	2.0	0.33	9	7.0	1.16
10	2.0	0.25	10	8.0	0.89
11	4.0	0.50	11	9.0	1.125
22	10.0	1.00	22	13.0	1.30
23	10.0	0.91	23	13.0	1.62
24	11.0	1.10	24	14.0	1.75
41	20.0	2.00	44	24.0	2.18
42	20.0	2.00	45	25.0	2.50
43	22.0	2.20	46	26.0	2.70
44	23.0	2.30	47	27.0	2.70
45	26.0	2.89	48	28.0	2.80
46	30.0	3.00	49	30.0	2.50

course in which it was earned. Thus, a P in a three-hour subject was counted as 3, and a P in a five-hour subject as 5. Inspection of the table reveals a surprising similarity in the positions of almost every student in the two series. Expressed in terms of the rank-difference formula, we have for the males a coefficient of $0.98 \pm .01$; and for the females a coefficient of $0.97 \pm .01$. The error arising from failure to weight the grades for number of hours per week may, therefore, be regarded as practically negligible.

TABLE 3

A comparison of the Total Mark Equivalentents when Marks were Unweighted, with Equivalentents when Each Mark was Weighted According to the Number of Hour-Credits Earned in Each Subject.

(Only enough cases are given to serve as samples in the different ranges.)

Males			Females		
Indi- vidual	Not Weighted	Weighted	Indi- vidual	Not Weighted	Weighted
1	-8	-32	1	-8	-32
2	-8	-18	2	-8	-28
3	-6	-22	3	-4	-16
4	-6	-22	4	0	-2
5	-2	-8	5	1	3
6	-1	-1	6	5	12
7	0	1	7	6	13
8	0	0	8	7	25
9	0	10	9	8	23
10	2	6	10	9	37
11	2	14	11	9	31
23	10	27	23	13	49
24	10	37	24	14	54
25	11	39	25	14	50
42	20	57	44	24	74
43	22	66	45	25	75
44	23	64	46	26	72
45	26	82	47	27	81
46	30	102	48	28	96
47			49	30	86

CHAPTER IV

ENTRANCE AGE AS RELATED TO COLLEGE EFFICIENCY

This chapter deals with the comparative scholarship and persistence of the groups who entered at various ages, *i. e.*, of the 17-year-old, the 18-year-old, the 19-year-old, etc., entrants. The 17-year-old entrants include students whose ages at the time of entering college ranged from 16 years, 6 months, to 17 years, 6 months. The 18-, 19-, and 20-year-old entrants, etc., each cover similar ranges.

The percentages of the students who entered at different ages are shown in Table 4.

TABLE 4
Percentage of College Entrants at Each Age

Age at Entrance	Males			Females		
	Class 1910-11	Class 1911-12	Both Classes	Class 1910-11	Class 1911-12	Both Classes
16	2.2	2.8	2.5	1.6	0.8	1.2
17	8.8	9.8	9.2	9.1	8.7	8.8
18	20.6	26.2	24.5	38.2	36.5	37.2
19	32.3	29.3	30.2	28.9	30.2	29.2
20	22.1	15.9	18.4	10.9	15.8	13.5
21	5.1	9.3	7.6	6.6	3.9	5.3
22	4.4	2.7	3.2	1.6	1.8	1.8
23	2.4	1.6	1.9	0.4	0.4	0.4
24	0.7	0.6	0.7	0.9		0.5
25	0.7	0.6	0.7	0.4		0.2
26		1.2	0.7	0.4	0.8	0.7
27						
28				0.4		0.2
29	0.7		0.4		0.8	0.4
30				0.4		0.4
35				0.4	0.4	0.2

This table shows an extreme range in entrance-age of from 16 to 29 for the males, and from 16 to 35 for the females. Eighteen appears to be the modal entrance age for the females and 19 for the males. The median in both sexes is 19; the average for the males is 19.2, with a mean variation of 1.22; for the females, 18.9, M. V., 1.12. The females were on the whole three tenths of a year younger

than the males when both began their college work. Despite the wider range in the females, comparison of the average variations shows that males were marked by the greater variability in entrance ages.

SECTION 1

COMPARISON OF THE SCHOLARSHIP MARKS OF THE GROUPS ENTERING AT DIFFERENT AGES

The methods pursued in making these comparisons have been described at length in Chapter III. It is necessary at this point only to interpret the tables and graphs containing the results.

The reader is invited to turn first to the accompanying tables, and to observe the following points. Tables 5 to 7 show the number of males belonging to each of the different entrance-age groups, during each college year, and the comparative scholarship of each age-group; these data are presented separately for the two entrance classes (Tables 5 and 6), and for both classes combined (Table 7). Tables 8 to 10 present similar data organized in like fashion for the female entrants. Comparative scholarship is stated in terms of (1) the range between the number representing the total numerical equivalent of the marks of the lowest pupil in each group, and the number representing the marks of the pupil standing highest in each group; (2) the range between the number representing the pupil occupying the first quartile position and the number for the pupil occupying the third quartile position in each group; (3) and the number representing the total equivalents of the marks earned by the median pupil in each group. The median as thus described will be taken as the standard measure of central tendency, and the range of the middle 50 percent as the standard measure of variation, in that part of our study which is concerned with comparisons of efficiency as shown by scholarship marks.

It has not seemed desirable to attempt to present all of these features in the graphs. The median, being the measure of central tendency, is, of course, the fundamental unit of comparison, and must be portrayed. The range of the middle 50 percent or the interquartile range, is of considerable assistance in interpreting the median, and often in qualifying or elaborating inferences based

upon it. But no significant purpose would be served by an attempt to portray the extreme range in scholarship shown by each group, since the numerical values representing these extremes are often, if not always, accidental.

The reader's attention is now directed to Graph II.¹ Let us offer a concrete interpretation. This graph describes the scholarship achievements of the freshmen who entered at different ages; the males are represented on the left side of the graph, and the females on the right. Note, for illustration, the male curves. The heavy black curve represents the males of both entrance classes combined, and shows that the numerical value of the marks earned by the median pupil of the group who entered at sixteen was 14, of the group who entered at seventeen was 16, etc. After eighteen, the curve is seen to turn rapidly toward the base until twenty-two, after which it becomes generally normal again, indicating that the median students of the groups entering at ages from 19 to 22, stood lower in scholarship than those of the groups entering before and after these ages. The 25-year-old entrance group is a conspicuous exception. The horizontal broken lines represent the range of the middle 50 per cent, all male entrants considered. This is seen to follow the general tendency displayed by the median. The dotted and broken lines represent, respectively, the medians of the different age-groups in the entrance classes of 1910 and 1911.

The curves on the right-hand side of the graph, representing the female freshmen, may be interpreted in like manner. The most noticeable feature here is that the drop indicating a decline in scholarship from 19 to 22, while present, is much less pronounced than in the case of the males.

Graphs III, IV, and V are all to be interpreted like Graph II. These three graphs represent the sophomore, junior, and senior attainments of the entrants of different ages. Graph VI brings together, for purposes of closer comparison, the heavy black curves, or

¹The reader will note that in this and all succeeding graphs the curve representing scholarship merit runs vertically, rather than horizontally. In other words, scholarship values are represented on the abscissae, rather than on the ordinates, the latter being used to represent entrance ages, etc. The writer has two reasons for adopting this form: first, the graphs are thus made to correspond structurally to the tables; and second, this is the only graphic method which can be used consistently in all parts of the study.

“total” curves, of each of the other graphs. Inspection of this figure brings out the changes going on from year to year.

We can best summarize the conclusions from these tables and graphs under two heads; first, the differences in scholastic achievement marking the different age-groups during the freshman year; and second, the changes that appear in the course of the succeeding college years. Emphasis is put upon the differences appearing during the freshman year, because this was the only year in which all college entrants were in actual competition. Qualitative elimination becomes a disturbing factor later.

FRESHMAN DIFFERENCES

1. Males entering at ages from 19 to 21 or 22 stood lower in scholarship than those entering younger.

2. The same general tendency appears among the females, but not to the same degree, nor so consistently.

3. After 22 the scholarship curves are extremely variable, owing to the small number of cases, but they suggest somewhat better attainments.

TABLE 5

Comparative Scholarship, During Successive College Years, of Male Students Entering College in 1910 at Different Ages.

Scholarship stated in terms of numerical equivalents of marks earned by the median student, the first and third quartile student, and the best and poorest students of each entrance age group.

Freshman Entrance Age	Freshmen					Sophomores				
	Number of Students	Median Schol- arship	Range of Middle 50 percent		Range of Scholar- ship Values	Number of Students	Median Schol- arship	Range of Middle 50 percent		Range of Scholarship Values
			1st Quar- tile	3d Quar- tile				1st Quar- tile	3d Quar- tile	
16	3	18	....	....	12 to 26	3	22	....	....	4 to 24
17	12	13	7.5	19.75	1 to 26	8	14	11.50	17.75	-8 to 25
18	30	11.5	2.75	17.5	-6 to 30	21	13	5.5	20	-8 to 30
19	43	12	7	16	-8 to 23	27	10	8	19	1 to 26
20	29	4	-3	13	-8 to 23	13	8	2	22.5	2 to 29
21	7	9	6	19	6 to 20	5	8	5	15	4 to 19
22	5	4	-1	13.5	-6 to 18	2	11	....	....	7 to 15
23	3	16	....	....	7 to 23	..	....	....	....	.....
24	1	26	....	....	.....	1	15	....	....	.....
25	1	-6	....	....	.....	..	....	....	....	.....
26	..	....	....	....	.....	..	....	....	....	.....
27	..	....	....	....	.....	..	....	....	....	.....
28	..	....	....	....	.....	..	....	....	....	.....
29	1	17	....	....	.....	1	11	....	....	.....

Juniors						Seniors				
16	3	21	.....	.....	8 to 29	2	23	.....	.....	.....
17	7	19	18	21	10 to 29	5	20	16.5	26	16 to 29
18	13	20	10	26	5 to 31	10	19.5	12.5	20.25	6 to 29
19	13	17	4.5	24.5	-4 to 30	10	19	15.75	22.75	-10 to 28
20	8	25	10.75	33.25	0 to 35	6	19	14.25	24	12 to 36
21	2	17	.....	.....	14 to 20	1	30	.....	.....	.....
22	1	18	.....	.....	.....	..	.....	.....	.....	.....
23	..	.....	.....	.....	.....	..	.....	.....	.....	.....
24	1	26	.....	.....	.....	1	34	1	34	.....
25	..	.....	.....	.....	.....	..	.....	.....	.....	.....
26	..	.....	.....	.....	.....	..	.....	.....	.....	.....
27	..	.....	.....	.....	.....	..	.....	.....	.....	.....
28	..	.....	.....	.....	.....	..	.....	.....	.....	.....
29	1	16	.....	.....	.....	1	14	.....	.....	.....

TABLE 6

Comparative Scholarship, During Successive College Years, of Male Students Entering College in 1911 at Different Ages.

Scholarship stated in terms of numerical equivalents of marks earned by the median student, the first and third quartile student, and the best and poorest students of each entrance age group.

Freshman Entrance Age	Freshmen					Sophomores				
	Number of Students	Median Scholarship	Range of Middle 50 percent		Range of Scholarship Values	Number of Students	Median Scholarship	Range of Middle 50 percent		Range of Scholarships Values
			1st Quartile	3d Quartile				1st Quartile	3d Quartile	
16	5	12	6.5	25	6 to 28	5	15	7	28.25	6 to 29
17	17	17	10	21.5	-4 to 27	14	15.5	12.75	20.25	9 to 28
18	47	15	6	19	-8 to 28	34	15	9	24	-8 to 37
19	52	8.5	2	11	-10 to 25	31	11	6	15	-8 to 28
20	29	6	0	11	-10 to 26	19	8	-2	15	-8 to 27
21	17	8	3	16.5	-8 to 24	10	7.5	3.75	15.5	-4 to 26
22	5	20	1	24.5	-2 to 28	4	16.5	-3	25.25	-6 to 26
23	3	16	.....	.....	-8 to 24	1	25	.....	.....	.....
24	1	-2	.....	.....	.....	..	.....	.....	.....	.....
25	1	-3	.....	.....	.....	1	16	.....	.....	.....
26	2	12	.....	.....	.....	1	11	.....	.....	.....
Juniors						Seniors				
16	4	21.75	.....	.....	12 to 28	1	27	.....	.....	.....
17	13	17.25	12.5	22	6 to 26	6	17.25	15.37	22.74	14.25 to 23.2
18	28	20	14.5	26	8 to 32	19	22.5	18	28.5	1 to 37
19	14	16	13.5	18	8 to 37	9	21.75	19.5	30.12	18 to 37
20	8	11.5	4.5	9.75	0 to 22	3	21	.....	.....	6 to 21
21	6	15	8.5	21.5	4 to 32	3	-1.25	.....	.....	6 to 17
22	2	30	.....	.....	28 to 32	1	23.25	.....	.....	.....
23	1	26	.....	.....	.....	1	30	.....	.....	.....
24	..	.....	.....	.....	.....	..	.....	.....	.....	.....
25	1	12	.....	.....	.....	1	18.5	.....	.....	.....
26	1	18	.....	.....	.....	1	13.5	.....	.....	.....
30	..	.....	.....	.....	.....	..	.....	.....	.....	.....

TABLE 8

Comparative Scholarship, During Successive College Years, of Female Students Entering College in 1910 at Different Ages.

Freshman Entrance Age	Freshmen					Sophomores				
	Number of Students	Median Schol- arship	Range of Middle 50 percent		Range of Scholar- ship Values	Number of Students	Median Schol- arship	Range of Middle 50 percent		Range of Scholarship Values
			1st Quar- tile	3d Quar- tile				1st Quar- tile	3d Quar- tile	
16	4	23.5	11.5	27.5	9 to 28	4	21.5	11.75	30.5	10 to 32
17	20	16	9	22.5	-4 to 29	15	19	12	24	3 to 28
18	88	15	12	20	-4 to 32	75	18	14	24	1 to 35
19	68	13	9	18	-8 to 31	57	18	13.5	23.5	-4 to 36
20	27	11	8	17	-2 to 30	18	16.5	9.75	22.5	-10 to 30
21	16	17	8	22	4 to 26	10	23.5	11	25.25	7 to 26
22	5	13	6	24.5	5 to 25	3	12	....	....	0 to 27
23	1	20	....	....	....	1	30	....	....	....
24	2	18	....	....	15 to 21	2	20	....	....	14 to 26
		15	....	....	....		
25	1	....	....	....	....	1	16	....	....	....
26	1	16	....	....	....	1	22	....	....	....
27	..	....	....	....	....	..	....	....	....	....
28	1	12	....	....	....	1	10	....	....	....
29	..	....	....	....	....	..	....	....	....	....
30	1	3	....	....	....	1	6	....	....	....
35	1	4	....	....	....		
Juniors						Seniors				
16	4	19.5	18.25	32.75	18 to 37	4	19	....	....	17 to 22
17	12	18	13.5	26	9 to 30	10	20	17.75	23.5	15 to 33
18	64	21.5	15	25	6 to 34	54	20	17	22	-6 to 29
19	49	20	16	26	0 to 34	42	20	17	24	8 to 37
20	16	21.5	14	26.25	10 to 32	16	22	18	24.75	14 to 30
21	9	20	19	31.5	8 to 34	5	20	15.5	24	14 to 27
22	2	20.5	....	....	18 to 23	1	18	....	....	....
23	..	....	....	....	....	..	....	....	....	....
24	1	23	....	....	....	1	23	....	....	....
25	1	25	....	....	....	1	28	....	....	....
26	..	....	....	....	....	..	....	....	....	....
27	..	....	....	....	....	..	....	....	....	....
28	..	....	....	....	....	..	....	....	....	....
29	..	....	....	....	....	..	....	....	....	....
30	..	....	....	....	....	..	....	....	....	....
35	..	....	....	....	....	..	....	....	....	....

TABLE 9

Comparative Scholarship, During Successive College Years, of Female Students Entering College in 1911 at Different Ages.

Freshman Entrance Age	Freshmen					Sophomores				
	Number of Students	Median Schol- arship	Range of Middle 50 percent		Range of Scholar- ship Values	Number of Students	Median Schol- arship	Range of Middle 50 percent		Range of Scholarship Values
			1st Quar- tile	3d Quar- tile				1st Quar- tile	3d Quar- tile	
16	2	6.5	....	....	5 to 8	2	7.5	....	....	2 to 13
17	22	17	13.75	20.25	-4 to 24	20	21	16.25	26.75	5 to 30
18	94	16	10	20.25	-6 to 30	74	19	13	23.25	4 to 33
19	76	14	8	20.75	-6 to 27	51	16	11	23	-8 to 35
20	39	14	6	18	-8 to 28	27	14	12	20	-6 to 40
21	10	14	5.5	18	2 to 20	1	16	....	....	.....
22	5	2	-2	16.5	-2 to 22	2	17	....	....	10 to 24
23	1	16	....	....	....	..	....	....	....	.....
24	..	....	....	....	....	..	....	....	....	.....
25	..	....	....	....	....	..	....	....	....	.....
26	2	20	....	....	7 to 33	1	23	....	....	.....
27	..	....	....	....	....	..	....	....	....	.....
28	..	....	....	....	....	..	....	....	....	.....
29	2	14	....	....	....	..	....	....	....	.....
30	1	15	....	....	....	1	15	....	....	.....
Juniors						Seniors				
16	2	5.12	....	....	0 to 10	..	....	....	....	.....
17	15	22	18	26	6 to 30	12	19.12	15.5	23	14 to 35
18	62	20	18	24	6 to 36	54	20.25	18	22.69	0 to 36
19	41	19.25	16	23	4 to 36	31	21	17.25	24.75	11 to 34
20	20	18.75	14	24	8 to 26	15	20.25	17.5	23.25	15 to 28
21	1	10	....	....	.....	1	15	....	....	.....
22	1	24	....	....	.....	1	19.5	....	....	.....
23	..	....	....	....	.....	..	....	....	....	.....
24	..	....	....	....	.....	..	....	....	....	.....
25	..	....	....	....	.....	..	....	....	....	.....
26	1	18	....	....	.....	1	16.5	....	....	.....
27	..	....	....	....	.....	..	....	....	....	.....
28	..	....	....	....	.....	..	....	....	....	.....
29	..	....	....	....	.....	..	....	....	....	.....
30	1	26	....	....	.....	1	15	....	....	.....

TABLE 10

Comparative Scholarship, During Successive College Years, of All Female Students Entering College at Different Ages.

Freshman Entrance Age	Freshmen					Sophomores				
	Number of Students	Median Scholar- ship	Range of Middle 50 percent		Range of Scholar- ship Values	Number of Students	Median Scholar- ship	Range of Middle 50 percent		Range of Scholarship Values
			1st Quar- tile	3d Quar- tile				1st Quar- tile	3d Quar- tile	
16	6	14	7.25	26.5	5 to 28	6	15	8	27.5	2 to 32
17	42	16	12.75	19.25	-4 to 29	35	21	15	26	3 to 30
18	182	15.5	11	20	-6 to 32	149	18	13	23	1 to 35
19	144	13.5	9	19	-8 to 31	108	17	12	20.75	8 to 36
20	66	14	7	17.25	-8 to 28	45	15	11	22	-10 to 40
21	26	15	8	20.25	2 to 26	11	23	12	24	7 to 26
22	10	8	1	22.5	-2 to 25	5	12	5	25.5	0 to 27
23	2	18	.....	.....	16 to 20	1	30	.....	.....	30
24	2	18	.....	.....	15 to 21	2	20	.....	.....	14 to 26
25	1	15	.....	.....	15	1	16	.....	.....	16
26	3	16	.....	.....	7 to 33	2	22.5	.....	.....	22 to 23
27	0	.....	.....	.....	.....	0	.....	.....	.....	.....
28	1	12	.....	.....	12	1	10	.....	.....	10
29	2	14	.....	.....	3 to 25	0	.....	.....	.....	.....
30	2	9	.....	.....	3 to 15	2	10.5	.....	.....	6 to 15
35	1	4	.....	.....	4	0	.....	.....	.....	.....
Juniors						Seniors				
16	6	18.5	7.69	24.25	0 to 37	4	18.5	17.25	21.25	17 to 22
17	27	21	15	26	6 to 30	22	19.75	17.19	23.06	13.75 to 35.50
18	126	20	16	24.25	6 to 36	108	20	17.25	22	-6 to 36.75
19	90	19.37	16	26	0 to 36	73	20.25	17	24	8 to 37
20	36	19.5	14	24	8 to 33	31	21	18	24	14 to 30
21	10	20	17.5	30.25	8 to 34	6	18.5	14.75	22.5	14 to 27
22	3	23	.....	.....	18 to 24	2	18.75	.....	.....	18 to 19.5
23	0	.....	.....	.....	.....	0	.....	.....	.....	.....
24	1	23	.....	.....	23	1	23	.....	.....	23
25	1	25	.....	.....	25	1	28	.....	.....	28
26	1	18	.....	.....	18	1	16.5	.....	.....	16.5
27	0	.....	.....	.....	.....	0	.....	.....	.....	.....
28	0	.....	.....	.....	.....	0	.....	.....	.....	.....
29	0	.....	.....	.....	.....	0	.....	.....	.....	.....
30	1	26	.....	.....	.....	1	22.5	.....	.....	22.5
35	0	.....	.....	.....	26	0	.....	.....	.....	.....

TABLE 11

Number of Semesters Spent in College by the Median Student, the First and Third Quartile Students, and the Two Extreme Students of Each Age-Group. Males Entering in 1910.

Age at Entrance	Number of Students	Median Semester Retention	Middle 50 Percent		Range of Semester Retention
			1st Quartile	3d Quartile	
16	3	8	..	..	5 to 8
17	12	5.75	2	8	2 to 8
18	30	4	2	8	1 to 8
19	43	4	2	6	1 to 8
20	29	2	1	5	1 to 8
21	7	4	2	5	2 to 8
22	5	1	1	4.5	1 to 5
23	3	2	..	..	2 to 2
24	1	5	..	..	..
25	1	1	..	..	..
26	..	..	..	..	..
27	..	..	..	..	..
28	..	..	..	..	..
29	1	8	..	..	..

TABLE 12

Number of Semesters Spent in College by the Median Student, etc. Males Entering in 1911.

Age at Entrance	Number of Students	Median Semester Retention	Middle 50 Percent		Range of Semester Retention
			1st Quartile	3d Quartile	
15	..	..	..	..	..
16	5	5.75	3.25	6	3 to 6
17	17	5.75	5.38	8	1 to 8
18	47	5.5	2	8	1 to 10
19	52	3	2	5.5	1 to 8
20	29	3	2	5.5	1 to 10
21	17	3	2	5.5	1 to 8
22	5	3	2.5	6.75	2 to 8
23	3	1	..	..	1 to 8
24	1	1	..	..	1
25	1	8	..	..	8
26	2	5	..	..	1 to 8

No entrants older than 26 in this class.

TABLE 13

Number of Semesters Spent in College by the Median Student, etc. All Males.

Age at Entrance	Number of Students	Median Semester Retention	Middle 50 Percent		Range of Semester Retention
			1st Quartile	3d Quartile	
16	8	6	5.5	6.25	1 to 8
17	29	5.75	2.25	8	1 to 8
18	77	5.5	2	8	1 to 10
19	95	3	2	5.5	1 to 8
20	58	3	2	5.5	1 to 10
21	24	3.5	2	5.5	1 to 10
22	10	3	1	5.5	1 to 8
23	6	2	1	3.5	1 to 8
24	2	4.5	..	..	1 to 8
25	2	5.5	..	..	1 to 10
26	2	5	..	..	2 to 8
27	..	..	..	..	..
28	..	..	..	..	..
29	1	8	..	..	8
30	..	..	..	..	..

TABLE 14

Number of Semesters Spent in College by the Median Student, etc. Females Entering in 1910

Age at Entrance	Number of Students	Median Semester Retention	Middle 50 Percent		Range of Semester Retention
			1st Quartile	3d Quartile	
16	4	8	5.75	8	5 to 8
17	20	6.25	2.5	8	1 to 8
18	88	8	4	8	1 to 8
19	68	8	4	8	1 to 8
20	27	8	2	8	1 to 8
21	16	5	2	8	1 to 8
22	5	4	2	7	2 to 8
23	1	3	..	..	3
24	2	6	..	..	4 to 8
25	1	8	..	..	..
26	1	4	..	..	..
27	0	..	..	..	..
28	1	4	..	..	..
29	0	..	..	..	..
30	1	3	..	..	..
35	1	2	..	..	..

TABLE 15

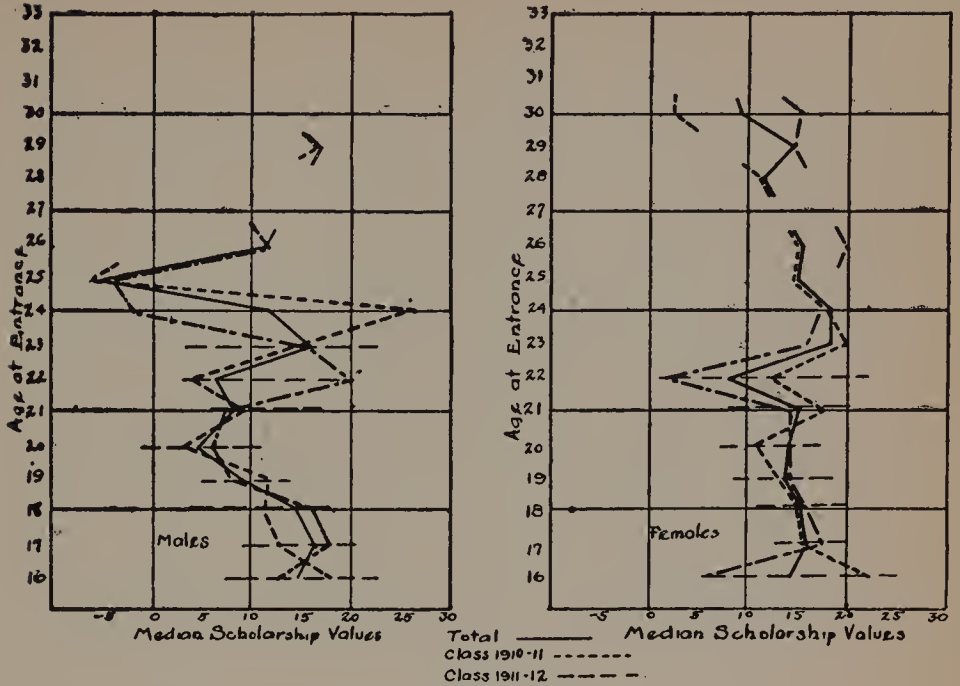
Number of Semesters Spent in College by the Median Student, etc. Females Entering in 1911.

Age at Entrance	Number of Students	Median Semester Retention	Middle 50 Percent		Range of Semester Retention
			1st Quartile	3d Quartile	
16	2	5.5	..	..	5 to 6
17	22	8	4	8	1 to 10
18	94	8	3	8	1 to 10
19	76	5.5	2	8	1 to 10
20	39	5.5	2	8	1 to 8
21	10	2	1.75	2	1 to 8
22	5	1	1	6	1 to 8
23	1	1	..	..	1
24	..	..	..	..	..
25	..	..	..	..	..
26	2	6	..	..	2 to 10
27	..	..	..	..	..
28	..	..	..	..	..
29	2	2	..	..	2
30	1	8	..	..	8

TABLE 16

Number of Semesters Spent in College by the Median Student, etc. All Females.

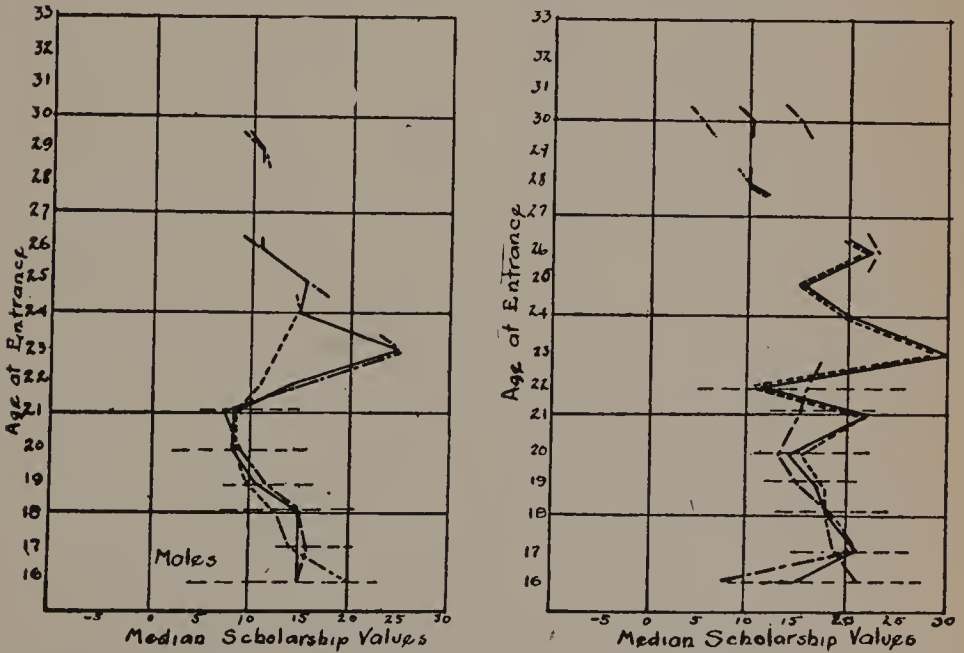
Age at Entrance	Number of Students	Median Semester Retention	Middle 50 Percent		Range of Semester Retention
			1st Quartile	3d Quartile	
16	6	7.75	5.25	8	5 to 8
17	42	7.75	4	8	1 to 10
18	182	8	4	8	1 to 10
19	144	6.5	2.5	8	1 to 10
20	66	5.5	2	8	1 to 8
21	26	2	2	7	1 to 8
22	10	3	1	6.5	1 to 8
23	2	2	..	..	1 to 3
24	2	6	..	..	4 to 8
25	1	8	..	..	8
26	3	4	..	..	2 to 10
27	0	..	..	..	..
28	1	4	..	..	4
29	2	2	..	..	2
30	2	5.5	..	..	3 to 8
35	1	2	..	..	2



GRAPH II.

COMPARATIVE SCHOLARSHIP DURING FRESHMAN YEAR OF STUDENTS ENTERING COLLEGE AT DIFFERENT AGES.

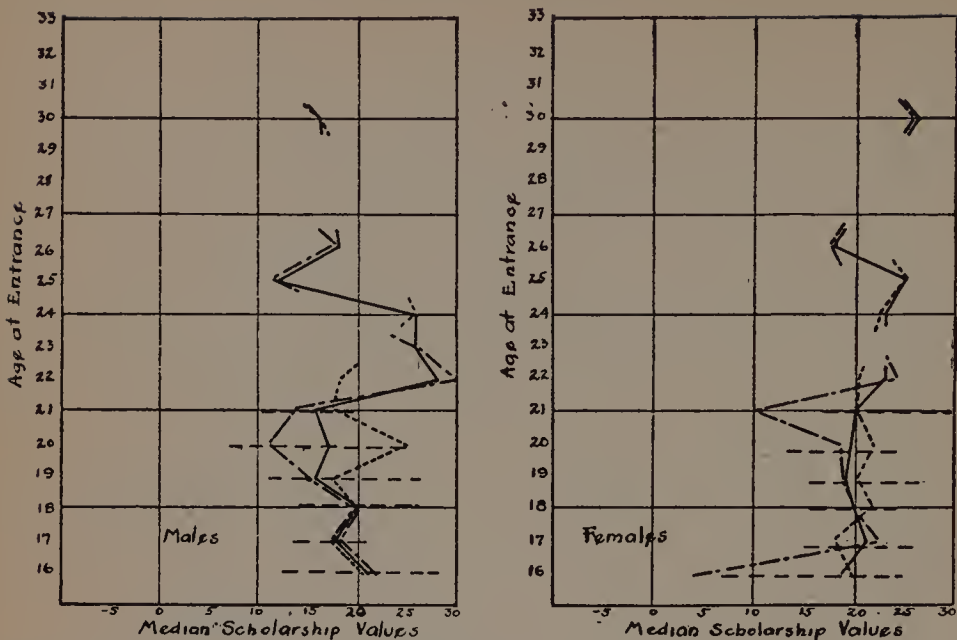
The horizontal broken lines indicate the range of each "middle 50 percent."



GRAPH III

COMPARATIVE SCHOLARSHIP DURING SOPHOMORE YEAR OF STUDENTS ENTERING COLLEGE AT DIFFERENT AGES.

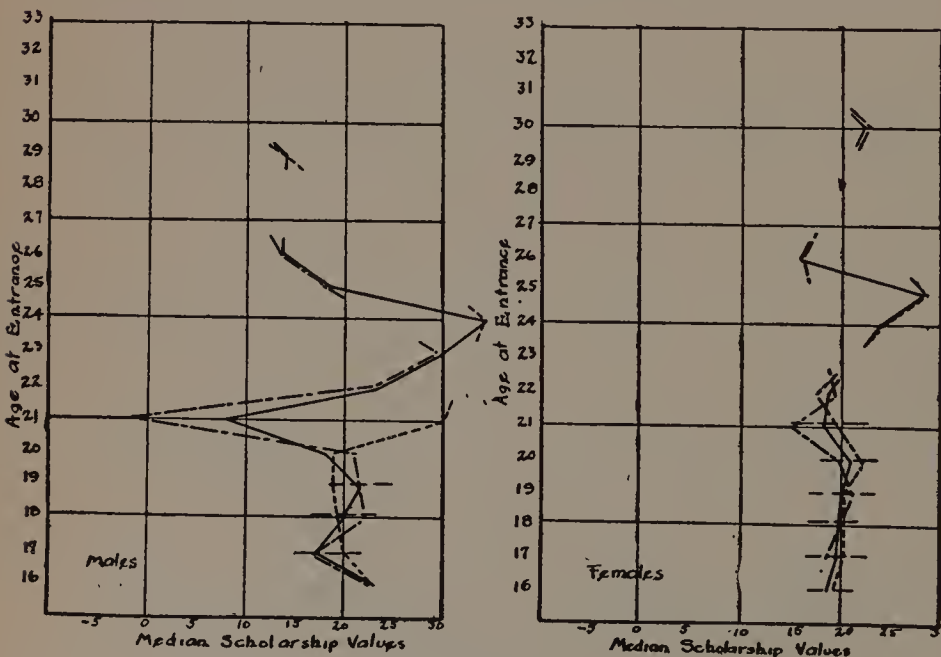
The horizontal broken lines indicate the range of each "middle 50 percent."



GRAPH IV.

COMPARATIVE SCHOLARSHIP DURING JUNIOR YEAR OF STUDENTS ENTERING COLLEGE AT DIFFERENT AGES.

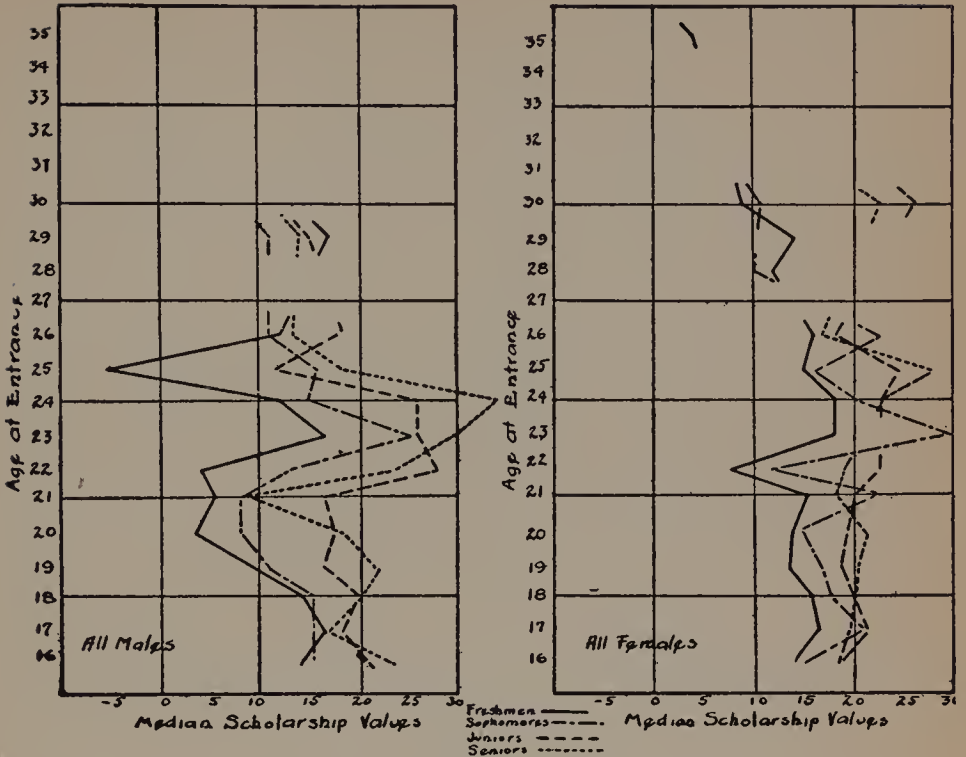
The horizontal broken lines indicate the range of each "middle 50 percent."



GRAPH V.

COMPARATIVE SCHOLARSHIP DURING SENIOR YEAR OF STUDENTS ENTERING COLLEGE AT DIFFERENT AGES.

The horizontal broken lines indicate the range of each "middle 50 percent."



GRAPH VI.

COMPARATIVE SCHOLARSHIP DURING SUCCESSIVE COLLEGE YEARS OF STUDENTS ENTERING COLLEGE AT DIFFERENT AGES.

DIFFERENCES APPEARING DURING SUCCEEDING COLLEGE YEARS

1. In both sexes the depression representing the intermediate ages from 19 to 21 or 22 decreases in passing from the freshman to the senior year, and practically disappears by the time the latter year is reached; the males who entered at 21 and the females who entered at 21 and 22, alone still show some deficiency in the senior year.

2. There is an increase in the standard of scholarship shown by all entrance groups up to the junior year, but little increase is noticeable between the junior and the senior years.

3. This increase in standard of scholarship from year to year

is more marked among the older than among the younger entrants, in both sexes, but particularly in the males.

All three of the changes described as occurring from year to year are closely connected with the elimination phenomena to be outlined in the next section. A discussion of these changes, independent of the elimination factor, will appear in the next chapter, where the record of those students who remained for four full years is separately described.

SECTION 2

RELATION BETWEEN ENTRANCE AGES AND COLLEGE EFFICIENCY AS DISPLAYED BY ELIMINATION AND RETENTION

The relation between annual entrance age and retention in college is important for two reasons; first, it furnishes another criterion of college efficiency; and second, it affords a means of explaining, at least in part, the increase in standards of scholarship which we have found appearing in successive college years.

We shall attempt to demonstrate this relationship, first, in terms of the number of semesters which the median student of each age-group remained in college; and second, in terms of the percent dropped from each age-group during or at the end of each college year.

1. *Retention described in terms of semester retention of median pupil.* The tables and graph here presented (Tables 11 to 16, and Graph VII), resemble, in form, those of the preceding section. The semester retention of each age-group is stated in terms of (1) the extreme range, (2) the range of the middle 50 percent, and (3) the median. The sole difference is that here are portrayed the number of semesters spent in college by the median, the first and third quartile, and the two extreme students of each age-group that is represented, rather than their marks.

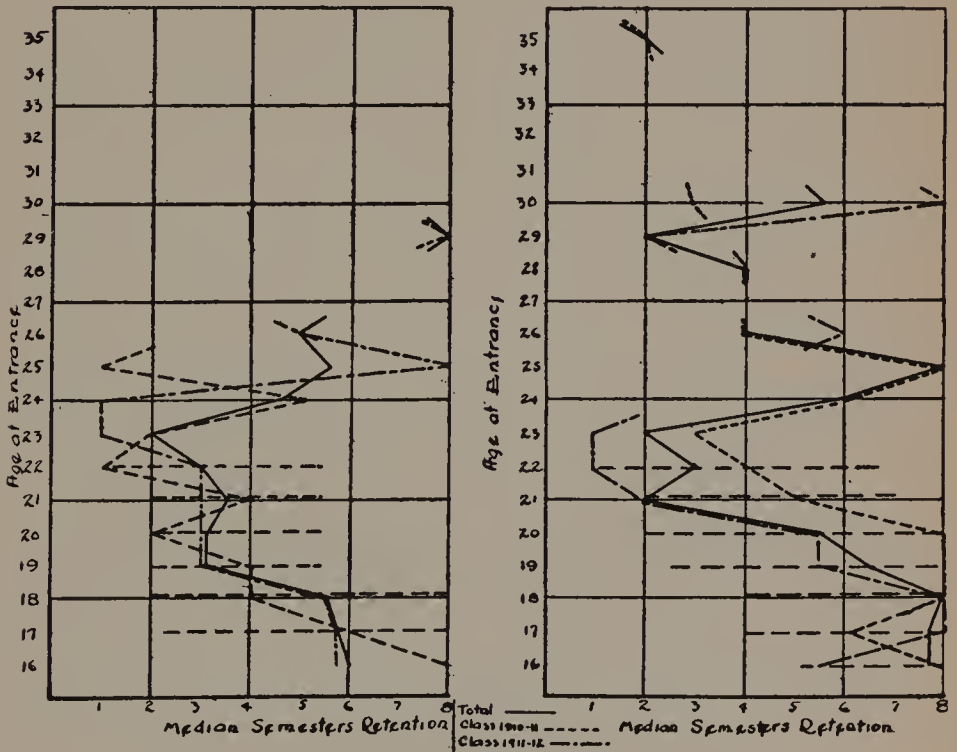
Reference to the "total" curves in Graph VII reveals the following facts:

a. The retention curves, like the mark curves, are bi-modal. Again the central depression (or bend toward the abscissa) begins with the entrance age of 19, but here extends to include the 22-year-old entrance group.

b. The superiority of the older entrants (above 23) in retention is more marked and more consistent than their superiority in scholarship.

c. The middle 50 percent shows a change in position with the different entrance ages which fairly parallels the changes shown by the medians.

2. Retention described in terms of percentages eliminated annually. Tables 17 and 18, with Graphs VIII and IX, state the percentages of the two entrance classes combined who were eliminated during, or at the end of, the freshman, sophomore, and junior college years. Senior eliminations were too few to be considered in terms of annual entrance ages. An attempt is also made in these tables and graphs to evaluate two important causes of elimination; *i. e.*, poor scholarship and change in college plans.

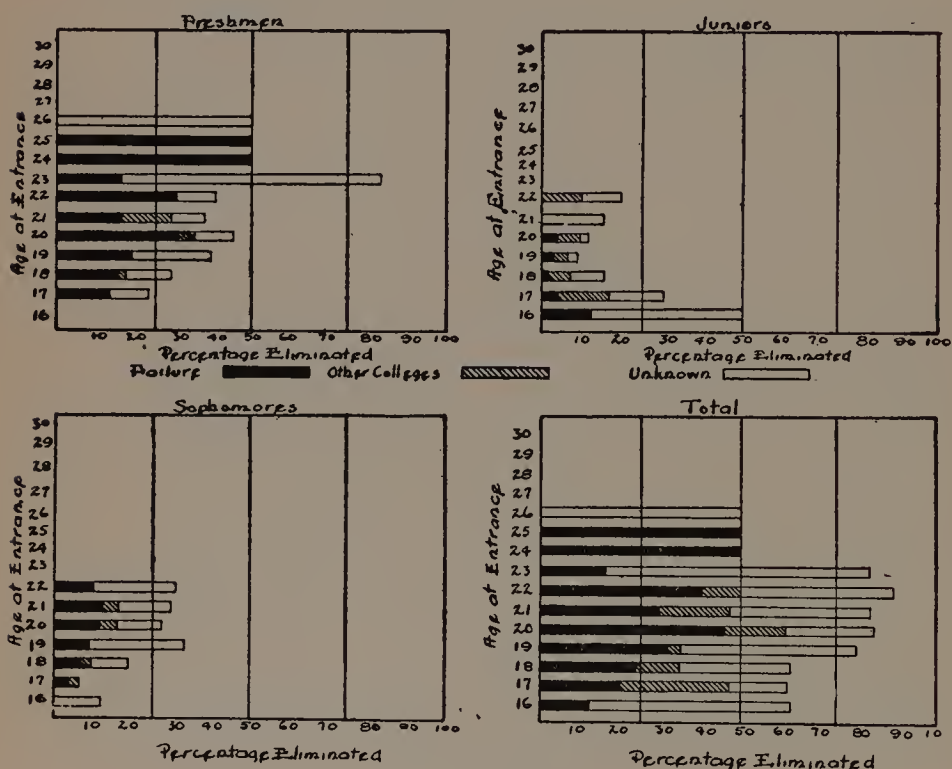


GRAPH VII.

COMPARATIVE RETENTION OF STUDENTS ENTERING COLLEGE AT DIFFERENT AGES, STATED IN TERMS OF THE NUMBER OF SEMESTERS WHICH THE MEDIAN STUDENT OF EACH ENTRANCE-AGE GROUP REMAINED IN COLLEGE.

(The horizontal broken lines indicate the range of the "middle 50 percent.")

The University of Minnesota has had a ruling to the effect that any student who stood below passing grade in three or more subjects should be dropped. To the students leaving college under these conditions, we have added those who received a C or an F in all of their work in case they were carrying fewer than three subjects. These students we have regarded as eliminated clearly because of poor scholarship, and have so entered them in the tables and graphs. It is highly probable that, through discouragement, poor scholarship caused the elimination of many others, but the extent of this influence cannot be measured. Certainly, we remain well within the truth when we confine our tables to those cases in which the university could take action.

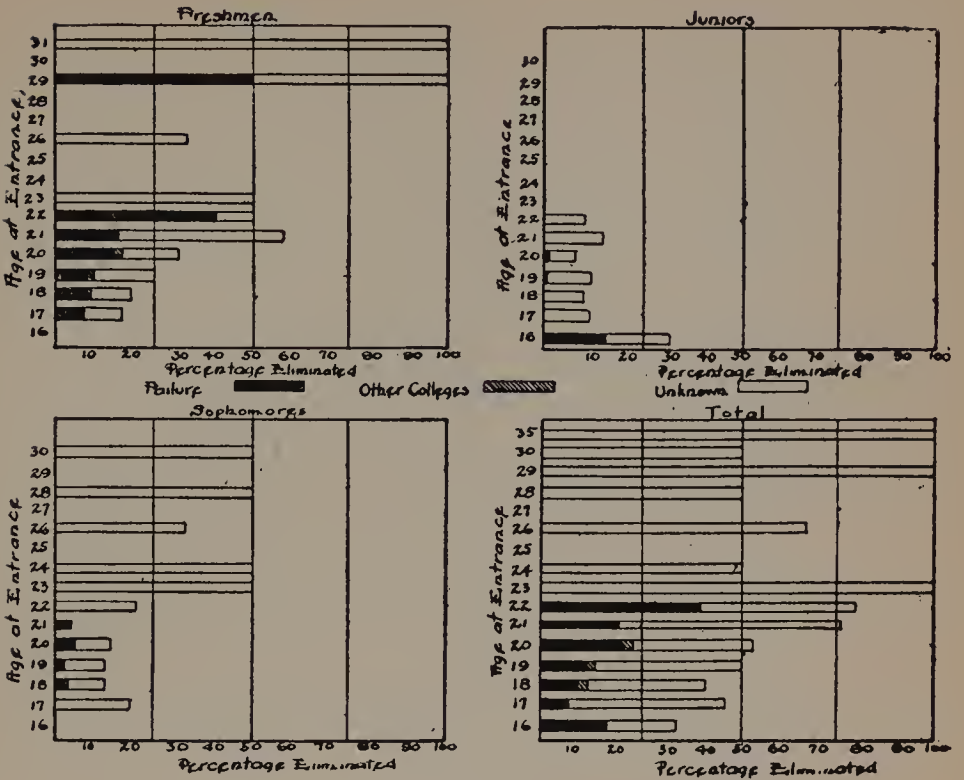


GRAPH VIII.

COMPARATIVE ELIMINATION, WITH PRINCIPAL CAUSES, OF MALES ENTERING COLLEGE AT DIFFERENT ENTRANCE-AGES.

TABLE 18
Percents of Female Entrants Eliminated in Each College Year for Stated Causes.

Age at Entrance	Number of Students	Freshman Eliminations				Sophomore Eliminations				Junior Eliminations				Total Eliminations			
		Total Percent Eliminated	For Poor Scholarship	To Enter Other Departments	Cause Unknown	Total Percent Eliminated	For Poor Scholarship	To Enter Other Departments	Cause Unknown	Total Percent Eliminated	For Poor Scholarship	To Enter Other Departments	Cause Unknown	Total Percent Eliminated	For Poor Scholarship	To Enter Other Departments	Cause Unknown
16	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16.7
17	42	16.7	7.1	..	9.6	19.0	..	19.0	..	11.9	..	11.9	..	47.6	7.1	..	40.5
18	182	18.1	7.2	1.1	9.8	12.6	1.6	10.5	0.5	9.9	..	9.9	..	40.6	8.8	1.6	30.2
19	144	25.0	7.6	1.4	16.0	12.5	4.5	9.0	..	11.8	0.7	11.1	..	49.3	10.4	1.4	37.5
20	66	31.8	13.6	1.5	16.7	13.5	4.5	9.0	..	7.6	1.5	6.1	..	52.9	19.6	1.5	31.8
21	26	57.7	15.4	..	42.3	3.8	3.8	..	..	15.4	..	15.4	..	76.9	19.2	..	57.7
22	10	50.0	40.0	..	10.0	20.0	..	20.0	..	10.0	..	10.0	..	80.0	40.0	..	40.0
23	2	50.0	..	..	50.0	50.0	..	50.0	..	50.0	..	50.0	..	100.0	..	..	100.0
24	2	..	..	..	..	50.0	..	50.0	..	..	..	..	..	50.0	..	..	50.0
25	1	..	..	..	33.3	33.3	..	33.3	..	..	..	..	..	66.7	..	..	66.7
26	3	33.3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
27	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
28	1	..	..	..	..	50.0	..	50.0	..	..	..	..	..	50.0	..	..	50.0
29	2	100.0	50.0	..	50.0	50.0	..	50.0	..	..	..	..	..	100.0	50.0	..	50.0
30	2	..	..	..	..	50.0	..	50.0	..	..	..	..	..	50.0	..	..	50.0
35	1	100.0	..	..	100.0	..	..	..	..	..	..	..	..	100.0	..	..	100.0



GRAPH IX.

COMPARATIVE ELIMINATION, WITH PRINCIPAL CAUSES, OF FEMALES ENTERING COLLEGE AT DIFFERENT AGES.

In the columns headed "Other Departments" we have included those who left the College of Arts and Sciences to enter some other college department of the University of Minnesota.² Changes to other colleges outside the university are not recorded; there are no data available upon that subject.

The material contained in the tables is fully represented in the graphs. We may consequently base our inferences upon the latter alone.

²These "other departments" include the Colleges of Law, Medicine, Dentistry, Pharmacy, Engineering, and Agriculture. Students transferring to the College of Education were treated as continuing in the College of Arts, because the greater part of their work was still in the latter college. The caption "other departments" is used in preference to "other colleges," to avoid confusion of these students with those who left the University of Minnesota to enter college elsewhere.

1. In both sexes the elimination occurs mostly during the freshman year, and least during the junior year.

2. During the freshman and sophomore years, in both sexes, elimination increases generally with increase in entrance age. In the junior year, this tendency appears to be reversed.

3 Inspection of the "total" section of each graph shows that, in both sexes, elimination is greater from ages 19 to 23, inclusive, than from ages 16 to 18, or 24 to 26. The graph for females shows another increase in the more advanced entrance ages, but the cases here are few in number.

4. Both causes of elimination noted, poor scholarship and change from one department to another, are more effective among the males than among the females.

5. Among the males, poor scholarship is far more effective during the freshman year, and change of department is somewhat more important during the junior year. Both causes display their greatest influence upon the females during the freshman year.

6. Poor scholarship eliminations show a general tendency to increase with entrance-age up to the 25-year-old male entrants and the 22-year-old female entrants.

SECTION 3

SUMMARY

The foregoing facts demonstrate the existence of certain relations between the ages at which these students entered college and the quality and consistency of their college work.

The point to which we would call particular attention is the clear inferiority, at least during the freshman year, of what we may call the middle entrance ages, most marked from 20 to 22. This inferiority is evident both in scholarship and in retention. The students who entered college after 19 and before 23 or 24, therefore, showed inferior efficiency, as compared with those who entered younger. The students who entered after the ages of 23 or 24 are too few in number to be very dependable, but there would appear

to have been some improvement in their cases. The differences mentioned, particularly the scholarship differences, are more conspicuous among the males than among the females.

In passing from the freshman to the senior college year, the groups which showed marked deficiency during the freshman year practically overtook the other groups. One cause of this phenomenon is very clear; *i. e.*, that there was a greater proportional elimination of poor students from these middle-age groups during the early college years. In a later chapter, we shall present what is at least a partial explanation of all of the phenomena which we have just described.

The preceding study of the individual entrance ages suggests the feasibility of combining these ages for further treatment into three groups, which we may call the normal, the pre-normal, and the post-normal entrance-ages. A discussion of the college efficiency of the students making up each of these three groups follows in the next chapter.

CHAPTER V

NORMAL, PRE-NORMAL, AND POST-NORMAL ENTRANCE AGES AS RELATED TO COLLEGE EFFICIENCY.

This chapter aims to contrast the efficiency shown by those students who entered college at what may be deemed a normal entrance age, with that of those who entered before or after normal age.

Our first problem is to determine what may be regarded as the normal age or ages at which students should enter college. This we may arrive at, first, as follows: In an earlier chapter we have noted that the most auspicious age for entrance into the elementary school seems to be six.¹ It is contended by many authorities that normal progress through the grades should be based upon entrance at the age of six, plus one year to allow for the frequent repetition of the first grade.² Adding twelve years, the length of the standard American pre-collegiate course, to six years, the normal age for entering the elementary school, gives eighteen as the normal age for entrance at college, irrespective of sex. Allowance for the year of leeway recommended by many writers, would extend this normal entrance period to include nineteen. Eighteen and nineteen thus become the normal ages for college entrance. This idea is confirmed by King's statement that 60 percent of our pupils enter the high school at fourteen and fifteen, and that there is little difference between the sexes in this regard.³

The conclusion may be confirmed thus: The percentages of college students who entered at different ages, as found in the present study, have already been presented in Table 4. In this table we find that fully 60 percent of the students of both sexes entered at the ages of eighteen and nineteen, and that more students

¹See Chapter II, Section 1.

²Van Sickle, Witmer, and Ayres. *Provision for Exceptional Children in Public Schools*. Bulletin U. S. Bureau of Education, 1911. No. 14.

³King, Irving. *The High School Age*. Bobbs-Merrill, 1914, p. 187.

of each sex entered at either of these ages than entered at any other one age. If the comparative number of entries, therefore, can be taken to indicate the normal time for entering college, then ages eighteen and nineteen are again shown to be the normal ages for entrance, while ages preceding these may be regarded as pre-normal, and ages following them as post-normal. A comparison of the efficiency of the students who entered before 18, at 18 and 19, and after 19 years of age, constituting respectively our pre-normal, normal, and post-normal entrance groups, becomes the problem of this chapter.

SECTION 1

COMPARATIVE COLLEGE EFFICIENCY AS MEASURED BY SCHOLARSHIP MARKS

The tables and graphs accompanying this section are similar in form and interpretation to those in Section 1 of Chapter IV. There are but two differences. First, we consider here only three entrance groups, each a combination of several of the age-groups discussed in the previous chapter. Secondly, we discontinue separate treatment of the classes entering in 1910 and 1911. In this chapter, and henceforth throughout the study, we shall treat these classes as if they formed a single entering class, in order to simplify our presentation and to deal with the largest possible numbers. The author, however, has carried through the study for each class separately, and has found that each class alone displays the same general tendencies shown by the combined classes.

The reader's attention is first directed to Table 19, illustrated by Graph X. Table 19 shows the comparative scholastic efficiency, measured by the total mark values used in the preceding chapter, of the males and females entering at, before and after normal entrance-age. The scholarship of each group is displayed in terms of (1) the median student, (2) the first- and third-quartile students, and (3) the total range between the best and poorest student in each series. Comparisons are made separately for each of the four college years. Graph X illustrates the columns entitled "Median Scholarship" in the table, with lines of different character indicating the

TABLE 19

The Comparative Scholarship Values, in Terms of the Median, Middle 50 Percent and Total Range, of Students Entering College at, before, and after Normal Age.

Age at Entrance	Males					Females					
	Number of Students	Median Scholarship	Middle 50 percent		Range of Scholarship Values	Number of Students	Median Scholarship	Middle 50 percent		Range of Scholarship Values	
			1st Quartile	3d Quartile				1st Quartile	3d Quartile		
Freshmen						Freshmen					
Pre-Normal	37	16	9	21	-4 to 28	48	16	11.25	19.75	-4 to 29	
Normal	172	10	5	17	-10 to 30	326	15	10	20	-8 to 32	
Post-Normal	105	8	0	15	-10 to 28	116	14	7	18	-8 to 33	
Sophomores						Sophomores					
Pre-Normal	30	15	10.75	21.75	-8 to 31	41	21	15	26	2 to 32	
Normal	113	14	8	19	-8 to 37	257	17	13	23	-6 to 36	
Post-Normal	57	9	4.5	16	-8 to 29	70	16	11.5	24	-10 to 40	
Juniors						Juniors					
Pre-Normal	27	18	13	22	-8 to 29	33	20	16	26	0 to 37	
Normal	68	18	14	25.75	-4 to 36	216	20	16	25	0 to 36	
Post-Normal	31	18	12	26	0 to 35	53	20	16	24.5	8 to 34	
Seniors						Seniors					
Pre-Normal	14	21.25	16.75	23.06	14.25 to 29	26	19.25	17.19	23	13.75 to 35.5	
Normal	48	20.62	17.25	24.94	-10 to 37.5	181	20	17	23	-6 to 37	
Post-Normal	19	18	13.5	20	-6.5 to 36	43	20.25	18	24	14 to 30	

different college years. Inspection of the table with its accompanying graph brings out these facts:

1. During the freshman and sophomore years, the pre-normal entrants, both male and female, showed the highest scholarship, and the post-normal entrants showed the lowest.

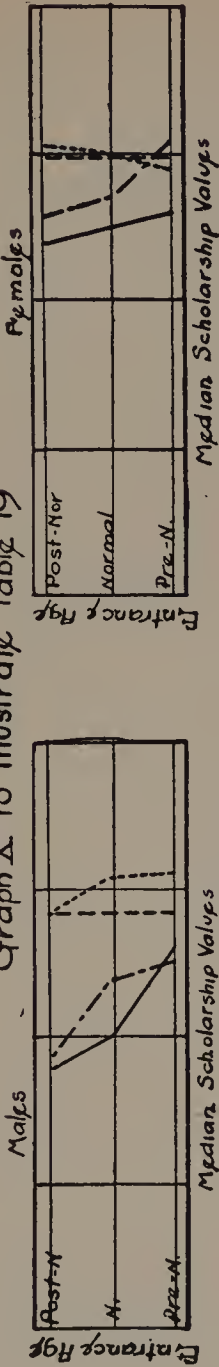
2. The differences in the achievements of these three entrance-groups were most pronounced among the males.

3. During the junior and seniors years, the achievements displayed by the three entrance-age groups were more nearly identical.

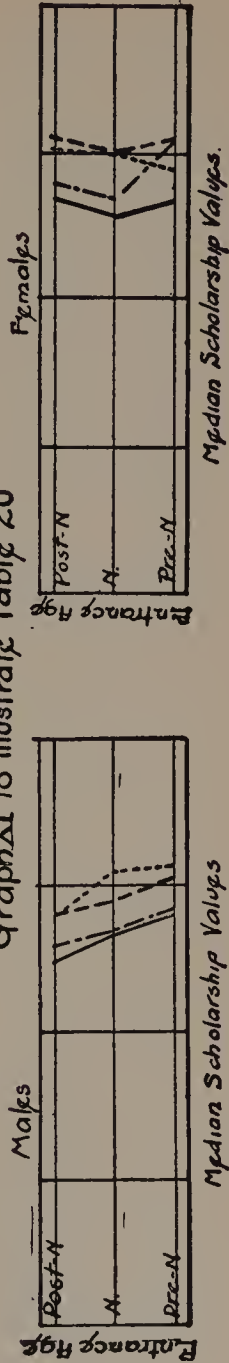
4. The female seniors showed a slight tendency to reverse the relations obtaining during the first two college years. That is to say, the post-normal entrants now displayed greatest efficiency, and the pre-normal entrants least.

5. All three entrance-age groups showed a general rise in the quality of the marks received, in passing through the successive

Graph X to illustrate Table 19



Graph XI to illustrate Table 20



college years. This tendency is greatest in the post-normal, and least in the pre-normal group, and most conspicuous among the males. These facts stand out much more clearly in Graph XI.

6. Among the males the post-normal group decreased in size most rapidly, and the pre-normal group least rapidly, in passing from the freshman to the senior college years. This tendency indicates that elimination among the males was greater among the older entrants. The problems of elimination will be treated more at length in Section 2.

7. The males showed a larger proportion than did the females in both the pre-normal and post-normal entrance groups; which agrees with a previous statement to the effect that the males showed the greater variability in entrance-ages.

TABLE 20

Comparative Scholarship, During Successive College Years, of Groups of Different Ages at Entrance Who Remained till Graduation

Age at Entrance	Males					Females				
	Number of Students	Median Scholarship	Middle 50 percent		Range of Scholarship Values	Number of Students	Median Scholarship	Middle 50 percent		Range of Scholarship Values
			1st Quartile	3d Quartile				1st Quartile	3d Quartile	
	Freshmen					Freshmen				
Pre-Normal	14	18.5	16	21.75	12 to 26	26	17	14.75	21	7 to 29
Normal	48	17	11	20	0 to 30	181	16	12	21.5	5 to 32
Post-Normal	19	15	11	21	-3 to 26	43	17	14	21	6 to 33
	Sophomores					Sophomores				
Pre-Normal	14	18.5	15	22	11 to 25	26	21	15	26	2 to 32
Normal	48	17	12.25	22.25	6 to 37	181	17	14	24	4 to 36
Post-Normal	19	16	11	25	2 to 29	43	18	14	24	7 to 40
	Juniors					Juniors				
Pre-Normal	14	20.5	18	23.5	10 to 29	26	21	16.5	26	6 to 37
Normal	48	19	14.25	26.75	-4 to 36	181	20	16	26	0 to 36
Post-Normal	19	18	12	26	0 to 35	43	21	16	25	8 to 34
	Seniors					Seniors				
Pre-Normal	14	21.25	16.75	23	14.25 to 29	26	19.25	17.2	23	13.25 to 25.5
Normal	48	20.6	17.25	24.9	-10 to 37.5	181	20	17	23	-6 to 37
Post-Normal	19	18	13.5	20	-65 to 36	43	20.25	18	24	14 to 30

Let us now contrast Table 19 and Graph X with Table 20 and Graph XI. In the latter we have displayed the achievements for each college year of those males and females only who persisted in their work until the end of the fourth year. Table 19 and Graph X thus differ from Table 20 and Graph XI, in that the latter pair exclude all those student who were eliminated before the end of the fourth college year, while the former pair include them. The differences noted may thus be attributed to elimination.

Comparison of these graphs and tables brings out the following additional facts:

8. In both sexes, the increase in scholarship shown in passing from the freshman up through the senior college years, is due in large measure to the elimination of the poorest students during each successive year. This statement is confirmed by reference to Table 21 and Graph XII, in which are represented the median standings of the pupils eliminated from college during, or at the end of, each collegiate year.

9. Elimination on account of poor scholarship appears to have been most important as a factor among the post-normal entrants, and among the males.

10. A considerable proportion of the rise in scholarship to be noted from year to year, is apparently due to the fact that upper classmen received higher marks than lower classmen, even when the same individual students were concerned in each case.

11. Of the eliminated students, the females ranked generally higher in scholarship than did the males; but of the four-year students the males show practically equal achievement, except in the post-normal group.

SECTION 2

COMPARATIVE COLLEGE EFFICIENCY AS MEASURED BY RETENTION AND ELIMINATION

From Table 22 and Graph XIII, describing the number of semesters which the median and quartile students of each entrance group remained in college, we derive the following statements:

1. The females showed far less tendency than the males to be lost before the end of the college course.

TABLE 21

Number of Students of Each Entrance Group Who were Eliminated During or at End of Each College Year and Their Median Scholarship

College Year	Age at Entrance	Male		Female	
		Number of Students Eliminated	Median Scholarship	Number of Students Eliminated	Median Scholarship
Freshmen	Pre-Normal	7	0	7	8
	Normal	59	6	69	10
	Post-Normal	47	1.5	46	5
Sophomores	Pre-Normal	3	5	8	9
	Normal	45	8	41	13.5
	Post-Normal	26	6	17	21
Juniors	Pre-Normal	13	13.5	7	20
	Normal	20	14.75	35	18
	Post-Normal	13	14	10	14.75
Seniors	Pre-Normal	Not ascer tained		Not ascer tained	
	Normal	Not ascer tained		Not ascer tained	
	Post-Normal	Not ascer tained		Not ascer tained	

TABLE 22

Number of Semesters Which the Median Student, and the First and Third Quartile Students, of each entrance group, Remained in College.

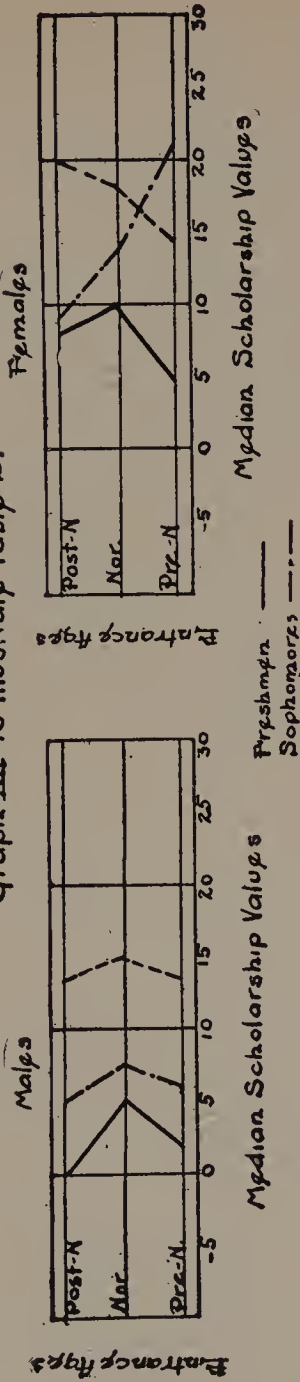
Age at Entrance	Semester Retention of Median Student	Males		Semester Retention of Median Student	Females	
		Semester Retention of Middle 50 percent			Semester Retention of Middle 50 percent	
		1st Quartile	3d Quartile		1st Quartile	3d Quartile
Pre-Normal	5.5	4.25	8	8	4	8
Normal	4	2	8	8	3	8
Post-Normal	3	2	5.5	4	2	8

2. In both sexes, the post-normal entrants showed the least degree of persistence; while with the males the pre-normal entrants showed the greatest.

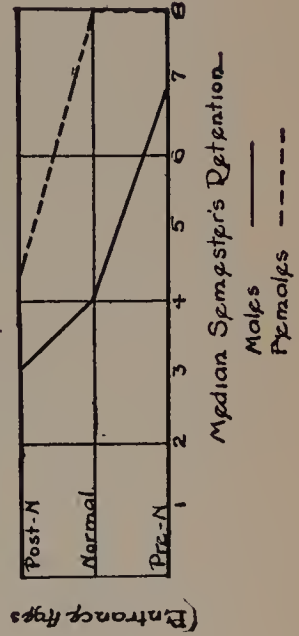
From inspection of Graph XIV, entitled "Percentages Eliminated Annually," we are able to add these facts:

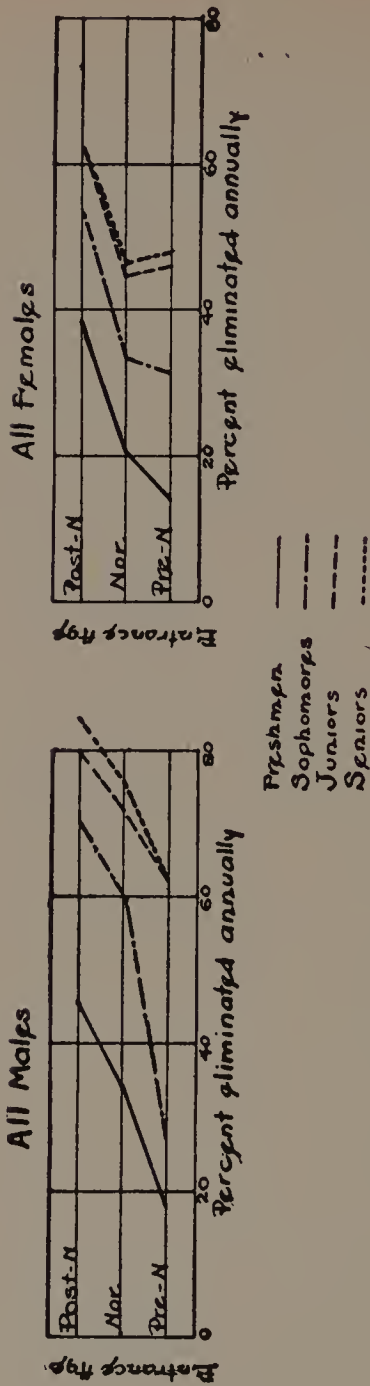
3. Among the normal and post-normal entrants, the greatest percentage of elimination occurred before the beginning of the sophomore year, the next greatest before the junior year, and the third greatest before the senior year; while by far the least dropping-out occurred during the senior year. This statement holds for both sexes. The pre-normals show some alteration of this order,

Graph XII to illustrate Table 21



Graph XIII to illustrate Table 22





GRAPH XIV.

PERCENTAGES OF THE PRE-NORMAL, NORMAL, AND POST-NORMAL ENTRANCE-GROUPS, OF BOTH SEXES, WHO WERE ELIMINATED DURING DIFFERENT COLLEGE YEARS.

but as this group was rather small numerically, it is not improbable that the order here is accidental.

4. The female normal entrance-group shows a slightly greater persistence than the pre-normal group, when thus subjected to a closer analysis. But the difference, while opposed to that found in the case of the males, is exceedingly small.

Returning now to Table 21 and Graph XII, which are concerned with the relation between elimination and scholarship, we find authority for adding the following to our catalogue of inferences:

5. The freshmen who were dropped displayed exceedingly poor scholarship, particularly the males; the sophomores who were dropped, while very low, did better work; the juniors who were eliminated were nearly the equals in scholarship of those who were retained. The number of students who were dropped during the senior year was too small to warrant continued comparison.

6. Poor scholarship was apparently a more consistent companion of elimination among those students who entered before and after normal age than among those who entered normally. The female sophomores and juniors show exception to this statement, but these are self-contradictory in their tendencies.

SECTION 3

SUMMARY

That the principal tendencies displayed in this chapter are completely in harmony with those described in Chapter IV, may be shown by a few brief statements.

During the freshman and sophomore years, the pre-normal entrants showed the highest college efficiency and the post-normal entrants showed the lowest. Little difference was manifested between these groups during the junior, and particularly the senior, college years.

Poor scholarship eliminations were greatest in the post-normal group, and least in the normal group.

Teachers gave increasingly high marks to the same students during successive college years. For statistical reasons, owing to the elimination of the poorer students during the earlier years, one would expect the marks of the group which remained to decrease rather than to increase in median value as time went on.

CHAPTER VI

A PARTIAL EXPLANATION OF THE RELATIONS OBTAINING BETWEEN AGE AT ENTRANCE AND COLLEGE EFFICIENCY

We have now to seek an answer to one main question: Why were the pre-normal entrants superior, and the post-normal entrants inferior in college efficiency to the normal entrants?

The explanation which we shall advance starts from this hypothesis. The students who entered college before normal age consisted of those students who were graduated from the high school early because of superior ability, and who would be expected to display corresponding superiority in college. The post-normal entrants comprised at least two groups of students; first, those who were graduated late from the high school, in most cases because of lack of interest or ability; and second, those who were graduated from the high school on schedule time, but who permitted an interval of a year or more to elapse before entering college. The inferiority of the post-normal entrants was due to the first, and possibly to both, of these groups.

The present chapter is devoted to the demonstration and application of this hypothesis. Its demonstration necessitates a comparison between the work done, both in the high school and the college, by those students who came to college immediately from the high school and the work done by those who permitted an interval to intervene. We shall accordingly divide each of the three entering groups into four sections, consisting respectively of (1) those students who permitted an interval of time to elapse between high-school graduation and college entrance, (2) those who were graduated from the high school after normal age, but came immediately to college, (3) those who were graduated late from the high school, and entered college a year or more thereafter, and (4) those who did neither, but who, after having been graduated on time, entered college immediately thereafter.

SECTION 1

NORMAL AND NON-NORMAL ENTRANCE-AGES AS RELATED TO IMMEDIACY
OF COLLEGE ENTRANCE

Let us first note the comparative number of normal, pre-normal, and post-normal entrants who belong in each of these divisions.

TABLE 23

Comparative Numbers of Students Entering College at Different Ages and at Different Periods After High-School Graduation.

	Males						Females					
	Pre-Normal college entrants		Normal college entrants		Post-Normal college entrants		Pre-Normal college entrants		Normal college entrants		Post-Normal college entrants	
	No.	Per- cent	No.	Per- cent	No.	Per- cent	No.	Per- cent	No.	Per- cent	No.	Per- cent
1. With in- tervening period.....	1	2.7	22	12.8	23	21.9	5	10.4	34	10.4	43	37.1
2. With late graduation.	..	..	..	..	58	55.2	..	..	..	..	42	36.2
3. With both.	..	..	..	..	7	6.7	..	..	..	..	18	15.5
4. With neither....	32	86.5	136	78.9	..	..	41	85.4	274	84.2	..	..
5. Unknown..	4	10.8	14	8.3	17	16.2	2	4.2	18	5.5	13	11.2

Certain features of this table might easily have been forecasted. No late graduates from the high school could be found among students who entered college at or before normal age, and none who was without either an intervening period or a late graduation could be found in the post-normal group. But the tables give us two new facts of considerable importance. Of the male post-normals, more were graduated from the high school late than entered college after a lapse of time, while of the female post-normals the reverse tends to be the case. Again, a larger proportion of the pre-normals than of the normals of both sexes, entered directly from a normal-age high-school graduation. It should also be noted that only six cases, in both sexes, of the pre-normals permitted a year of time to intervene before college entrance.

We pass next to the quality of scholarship displayed by each of these groups. This item was ascertained for the freshman year only—the year when differences in scholarship are most manifest and when all college entrants start in competition.

TABLE 24

Quality of College Scholarship Displayed by Students Entering at Different Entrance Ages and at Different Periods after High-School Graduation

	Pre-normal College Entrants		Normal College Entrants		Post-normal College Entrants	
	Me- dian schol- arship	Range of Middle 50 percent	Me- dian schol- arship	Range of Middle 50 percent	Me- dian schol- arship	Range of Middle 50 percent
<i>Males</i>						
1. With interven- ing period....	17	.....	13	8 to 19.5	16	9 to 20
2. With late graduation....	..	.....	..	.....	5.5	-1.25 to 13
3. With both....	..	.....	..	.....	7	-6 to 15
4. With neither..	16	9 to 21	11	5 to 18	..	.....
<i>Females</i>						
1. With interven- ing period....	18	10.5 to 23	15	10.75 to 23	16	12 to 21
2. With late graduation....	..	.....	..	.....	8.5	5 to 17
3. With both....	..	.....	..	.....	10.5	6 to 16.5
4. With neither..	16	11.5 to 19.5	15	10 to 20	..	.....

This table makes evident the following points:

1. Among the pre-normal entrants of both sexes, those pupils who waited a year or more after graduating from the high school before entering college, stood somewhat higher in their college work than did those who did not wait. Here we repeat that there were only six pre-normal entrants who permitted this delay.

2. The same fact appears among the males who entered at normal age. Among the female normal entrants, the two groups show the same median, but the range of the middle 50 percent is lower with those who entered college immediately, than with those who waited a year or longer. In these normal-entrance groups, the number of cases is sufficiently large to give significance to the results.

3. The point which we would especially emphasize in connection with our present problem, is found on inspection of the post-normal-entrance groups. Here we find that those students who were graduated from the high school late, and who for this reason were late entrants at college, stood lower than did those who were graduated from the high school on schedule time but who waited a year or longer before entering college. Those who were graduated late, and also permitted an intervening period, stood between the groups just described.

4. The post-normal entrants, who entered college a year or more after graduation, are evidently not responsible for the general inferiority manifested by this group, since in both sexes their median rank is above the median ranks of the total post-normal and normal groups.

These three results are rather generally confirmed when one applies the second of our criteria of efficiency, *i. e.*, retention. The post-normal entrants showed the following median semesters retention: males, with intervals, 5.75 semesters; males, with late graduation, 3 semesters; females, with intervals, 8 semesters; females, with late graduation, 5 semesters. The pre-normal females showed a better retention for those who entered immediately than for those who waited, but the pre-normal males who entered after a wait remained for college graduation. In the normal entrance-age group the regular entrants and those who delayed before entrance show the same median, and the same inter-quartile range.

These results substantiate that portion of our hypothesis which relates to the deficiency characterizing the post-normal entrants. These are demonstrated to consist of the two types of students assumed in the hypothesis, plus a third type in which both departures from normal entrance conditions are combined. Of these, students of the type entering college late because they were graduated from the high school behind schedule, are shown to be responsible for the deficiencies described.

It remains to prove that the pre-normal entrants did work in the high school superior to that done by the normal and post-normal entrants, and were thus a positively selected group; while the post-normal entrants who were graduated late from the high

school did inferior work there, and consequently were a negatively selected group. For this purpose we turn to the high-school records of the different groups of students.

SECTION 2

AGE AND IMMEDIACY OF COLLEGE ENTRANCE AS RELATED TO HIGH-SCHOOL SCHOLARSHIP

We are able in this connection to present the high-school records for only 285 of the 828 college entrants considered, but to secure even these the records of 3644 high-school seniors were examined. We can, however, state the scholarship position among his high-school classmates occupied by each of the 285 college entrants. To determine this position, the students of each high-school graduating class sending members to college were ranked in order of scholarship from highest to lowest, and divided into five equal groups, or quintiles. In the table accompanying this section (Table 25), this quintile position is stated for the median pupil, and for the first- and third-quartile pupils, of each of the groups entering college under the conditions described in Section 1. As the best of these quintiles was numbered 1 and the poorest was numbered 5, *the smaller the figure representing the median scholarship of each group, the better the scholarship rank.*

Table 25 affords the additional facts necessary to complete the demonstration of our hypothesis. The following statements are based upon it:

1. The pre-normal college entrants are seen to have ranked notably higher in high-school scholarship than the normal and post-normal entrants. This fact confirms our original assumption that they were a positively selected group.

2. All of the post-normal female entrants ranked lower in the high school than the normal and pre-normal entrants. They were thus all a negatively selected group. The two chief types of post-normal male entrants, the late graduates and those entering after a lapsed interval, showed a difference in high-school rank in favor of the latter. No difference of this kind is noticeable in the case of the females. These facts confirm our original assumption that the

TABLE 25

High-School Scholarship (in Terms of Quintile Distribution) of 285 High-School Graduates Entering College at Different Ages and at Different Periods after High School Graduation

	Pre-normal College Entrants		Normal College Entrants		Post-normal College Entrants	
	Me- dian schol- arship	Range of Middle 50 percent	Me- dian schol- arship	Range of Middle 50 percent	Me- dian schol- arship	Range of Middle 50 percent
<i>Males</i>						
1. With interven- ing period....	..	.....	4.3	1.5 to 5	2	2 to 4
2. With late graduation.....	..	.....	..	.....	3.2	1.5 to 3.8
3. With both....	..	.....	..	.....	2.5	2 to 3.25
4. With neither..	2.7	1.7 to 4	3.1	1.7 to 4.4	..	.....
<i>Females</i>						
1. With interven- ing period....	3	.....	2.5	1.6 to 3.7	2.7	2 to 4
2. With late graduation. ....	..	.....	..	.....	2.7	2 to 4.3
3. With both....	..	.....	..	.....	3	.....
4. With neither..	1.9	1.5 to 3.7	2.1	1.8 to 3.1	..	.....

post-normal entrants who were graduated from the high school late were a negatively selected group.

3. It should also be remarked that, in general, those students who entered college after a lapse of time, came from a poorer type of high-school graduates than did those who entered immediately after graduation. We have already seen (Table 24) that these elapsed-interval students did a better grade of work in college. These facts suggest that such an interval contributed to better college work. However, as the students in the two cases are not absolutely identical,—the earlier tables including many not included in the last—we must await the results disclosed in the next section.

SECTION 3

COMPARISON OF THE ACHIEVEMENTS OF IDENTICAL STUDENTS IN THE HIGH SCHOOL AND COLLEGE

Thus far we have seen (1) that the pre-normal college entrants did a better grade of work, both in the high school and college, than

the normal and post-normal entrants; and (2) that the post-normal college entrants who had been graduated late from the high school, shower inferior scholarship, both in college and high school. In other words, the college superiority of the pre-normal entrants and the college inferiority of the post-normal entrants, is due to the type of high-school student mainly selected by each group. But there is one defect in our proof thus far; the students for whom the high-school records are given constitute only a portion of those for whom the college records are given. In the following table, therefore, is stated the collegiate scholarship of identically the same students as those whose high-school scholarship is presented in Table 25.

TABLE 26

College Scholarship of 285 High-School Graduates Entering College at Different Ages and at Different Periods after High-School Graduation

	Pre-normal College Entrants		Normal College Entrants		Post-normal College Entrants	
	Me- dian schol- arship	Range of Middle 50 percent	Me- dian schol- arship	Range of Middle 50 percent	Me- dian schol- arship	Range of Middle 50 percent
<i>Males</i>						
1. With interven- ing period....	..	.....	16	3 to 17	12	10 to 19
2. With late graduation....	..	.....	..	.....	5.5	-6 to 14.75
3. With both....	..	.....	..	.....	8.5	.....
4. With neither..	11	7 to 18	10	4 to 17	..	.....
<i>Females</i>						
1. With interven- ing period....	10	.....	16	12.5 to 24.25	14	11.5 to 19
2. With late graduation....	..	.....	..	.....	7	5 to 14.5
3. With both....	..	.....	..	.....	14	.....
4. With neither..	14	8 to 17.75	14	9 to 18	..	.....

Comparison of this table with Table 24 shows that it reveals practically the same tendencies, and warrants the statement that the high-school records displayed in Table 25 are representative, even if incomplete.

SECTION 4

CONCLUSIONS

The main conclusions which we would state once more are these: First, students who entered the college at ages younger than normal entrance age stood higher and remained longer, upon the whole than those who entered normally or older. Second, students who entered at older than normal ages, stood lower and remained for a shorter period than those who entered at normal age or younger. Third, the 18-year-old normal entrants outstayed and outranked the 19-year-old normal entrants, and there is evidence that the post-normals who entered after 22 or 23 were somewhat more efficient than the younger entrants of the same group.

Do these statements mean that pressure should be exerted to force all prospective students into college before they are 18 years of age? Ought what we have described as 'pre-normal' to become the 'normal' entrance ages? Such a conclusion would be most ill-advised. Complete investigation shows that those students who entered college before 18 years of age were a selected group, who had finished the high school before the majority of their fellows because of superior ability, and who, accordingly, would be expected to surpass them in college. Owing to the high correlation shown to obtain between retention and good scholarship, they would also be expected to show greater persistence. A majority of the post-normal entrants, on the other hand, are shown to have been poor students in the high school, and for this reason to have been graduated therefrom at a comparatively late age. These students naturally would be slow and uncertain quantities in college. Selection, not age, is the real key to the situation.

But if the demonstrated superiority of the early over the late entrants cannot be urged as an argument that all students should enter college before 18, cannot the inferiority of the late entrants at least be urged to prevent those seemingly waste intervals which students often permit to elapse between high-school graduation and the taking up of college work? Here, again, our answer must be negative. The inferiority of these late entrants was clearly due to the poor students who made up a large part of the group, and not

intrinsically to age. Furthermore, in the normal entrance group those students who entered college a year or more after high-school graduation generally outranked those who entered immediately, in spite of the fact that they were apparently inferior students in the high school. Here the interval seemed in reality to contribute to college efficiency.

The second conclusion of general interest which we wish again to emphasize, relates to the better standard of scholarship displayed in passing from the first to the last college year. Two causes of this elevation in standards are clearly indicated. The first and most effective is the elimination of inefficient students, particularly during the first two college years. But the second, to which we would call particular attention, is the actually increasing generosity of teachers in the distribution of high marks, clearly shown by the fact that the same group of students received higher and higher grades from year to year. This fact is important as it indicates that the standard of work required during the successive college years did not rise in proportion to the rise in student ability. A proportional rise of this sort has been assumed, by those who advocate the normal curve as the criterion of a proper distribution of marks.

There is yet a third conclusion to which the reader's attention may profitably return. Several students of the problem of marking have shown that, in both the elementary and the high school, female pupils received higher marks than male pupils. Our data show that the same relations exist in college. But when we consider separately the males and females who spent four full years at college work, we discover that the difference has practically disappeared.

Two facts thus demand interpretation. As to the first, that, in general, the males received lower marks than the females, here, as in the earlier studies, we must beware of an interpretation which consigns either sex to the limbo of inferior ability. Doubtless several factors cooperate to produce this consistently appearing relation, and possibly not least among them is the better adaptation of our entire school system, from top to bottom, to the peculiar interests and abilities of the female sex. But upon this important question of causes our study throws no light, and we must content ourselves

with the mere confirmation of results already sufficiently proved by others.

The second fact, that the continuous four-year students of the two sexes showed practically equal efficiency, has not previously come to the writer's notice. Its full significance is not clear, but it possibly is no more than an indication that elimination had successfully removed the misfits of both sexes, and had left chiefly those who were peculiarly adapted to college life. These students were in all probability too much the product of an artificial selection to be representative of the usual abilities or achievements of either sex.

CHAPTER VII

SIZE OF HIGH SCHOOL AS RELATED TO EFFICIENCY IN COLLEGE

Is there any consistent relation between the number of pupils enrolled in the different high schools tributary to the university under discussion and the scholarship and persistence shown in college by their graduates?

The methods used in attempting to reach a solution of this problem, are fundamentally like those followed in the study of entrance ages. The main difference is that size of high school, rather than age at entrance, is used to determine membership in the student groups whose college efficiency is to be compared. There are six of these groups of public-school graduates, consisting respectively of those representing high schools with enrolments of (1) 100 pupils or less, (2) 101 to 200 pupils, (3) 201 to 300 pupils, (4) 301 to 500 pupils, (5) 501 to 1000 pupils, and (6) more than 1000 pupils. This grouping was borrowed from Counts¹ and from Jessup and Coffman² in order that our results might be made comparable with theirs. To these six groups we have added two others, not included in the earlier studies, consisting of the graduates of (7) military and (8) private schools, including schools maintained by religious orders.

SECTION 1

SIZE OF HIGH SCHOOL AS RELATED TO COLLEGE SCHOLARSHIP

The relation between size of high school and the college scholarship of high-school graduates, is shown in Tables 27 and 28. And Graph XV. These tables and this graph are formulated according to the plan already employed in Chapter IV, and should be interpreted similarly. They warrant these conclusions:

¹Judd, C. H., and Counts, G. S. Study of the Colleges and High Schools of the North Central Association. *Bulletin Bureau of Education*, 1915. No. 6.

²Jessup, W. A. and Coffman, L. D. North Central High Schools. *13th Year-Book of This Society*, 1914, pp. 73-115.

TABLE 27
College Scholarship of Male Graduates of Military, Private, and Public Schools of Different Enrolments

Type and Size of School	Freshmen						Sophomores						
	Number of Schools	Number of Students	Median Scholarship	Middle 50 Percent			Number of Schools	Number of Students	Median Scholarship	Middle 50 Percent			Range of Scholarship Values
				1st Quartile	3d Quartile	Range of Scholarship Values				1st Quartile	3d Quartile	Range of Scholarship Values	
1-100	39	59	10	4	14	- 8 to 28	26	32	11.5	8	17.5	- 8 to 28	
101-200	37	51	11	5	18	-10 to 28	26	38	12	8	20	- 8 to 27	
201-300	12	21	12	9	17.5	- 6 to 22	11	15	14	10	19	-10 to 29	
301-500	7	30	11.5	6.25	17.25	- 6 to 26	4	20	14.5	8.75	18.25	- 6 to 28	
501-1000	7	23	13	4	17	- 6 to 25	3	15	12	6	22	- 2 to 27	
1001+	5	82	13	2.75	20	- 8 to 30	5	56	14.5	7.5	21	- 8 to 37	
Private	13	22	7.5	-2.5	18	- 8 to 24	12	16	9.5	4.5	17.5	- 6 to 26	
Military	3	8	1	-5	5	- 8 to 12	2	4	5	.....	.....	- 2 to 19
										Seniors			
1-100	16	20	18	9	21.25	- 8 to 32	8	8	20	12.4	24.75	- 1 to 27	
101-200	18	22	19	15.7	24	0 to 30	10	10	20	15	24	0.5 to 30	
201-300	7	8	15	10.75	24	9 to 35	4	4	21.9	.....	.....	18 to 36
301-500	4	14	15.5	14	21.75	11 to 26	2	10	21.5	16.9	24.6	16 to 36	
501-1000	3	8	19.5	8.5	29.75	4 to 32	2	7	23	15	25	-10 to 37	
1001+	5	39	20	14	27	3 to 42	5	28	19.25	17.25	24.3	- 6 to 38	
Private	10	10	18.5	11.75	26.5	8 to 32	8	8	18.5	14.7	28.3	14 to 32	
Military	2	2	11	.....	.....	5 to 17	2	1	11	.....	.....	.....

TABLE 28
College Scholarship of Female Graduates of Private Schools and of Public Schools of Different Enrolments

Type and Size of School	Freshmen						Sophomores					
	Number of Schools	Number of Students	Median Scholarship	Middle 50 Percent		Range of Scholarship Values	Number of Schools	Number of Students	Median Scholarship	Middle 50 Percent		Range of Scholarship Values
				1st Quartile	3d Quartile					1st Quartile	3d Quartile	
1-100	42	58	13.5	8	17	-8 to 29	33	46	15.5	10	21	3 to 36
101-200	36	62	14	7	18	-6 to 28	29	47	16	12	23	-6 to 35
201-300	15	29	16	12.5	20.5	4 to 25	11	23	16	13	23	6 to 30
301-500	12	53	16	10.5	19.5	-2 to 31	11	45	18	14	25	4 to 33
501-1000	8	18	18.5	14	21.25	6 to 25	6	16	21	12.5	26.75	2 to 32
1001+	5	208	16	10	21	-6 to 33	5	156	19	13	23	-8 to 40
Private	8	32	11	1	17.75	-8 to 29	11	16	17	14	25	2 to 31
										Seniors		
1-100	26	35	19	14	23	0 to 30	22	28	20	17.25	26.25	10 to 37
101-200	28	40	20.5	16.5	26	8 to 34	25	37	21	18.75	22.75	6 to 27
201-300	10	17	19	15.1	21.5	10 to 26	8	13	18.75	17.5	20.5	0 to 26
301-500	11	37	23	19.5	26.5	9 to 37	10	34	20	16.75	23.1	-6 to 35
501-1000	6	13	22	19	27	14 to 30	6	12	20.75	19.2	22.75	15 to 32
1001+	5	130	19.5	15	26	0 to 36	5	104	19.5	17.25	23.2	12 to 37
Private	9	13	18	12.5	25	10 to 36	7	9	20.25	13.5	24	11 to 25
										Juniors		

1. In the case of males, military-school graduates show in the freshman year the poorest general scholarship in college, private-school graduates come next, and the college scholarship of public-school graduates is generally higher in the product of the larger than of the smaller schools.

2. The same general tendency appears among the females, except that a deficiency is noticed in the graduates of schools enrolling more than 1000 pupils. The probable explanation is that, as all of the schools of this size were local (Minneapolis schools), a larger proportion of all their female graduates, and hence of their inferior female graduates, entered the university. A corresponding decline of the college scholarship curve would be expected.

3. In both sexes the above described tendencies are largely lacking in the last two college years, when the curves show great irregularity. This change is clearly due to elimination, which factor will next be described. Meanwhile, the reader must bear in mind that freshman scholarship alone bears directly upon our problem.

SECTION 2

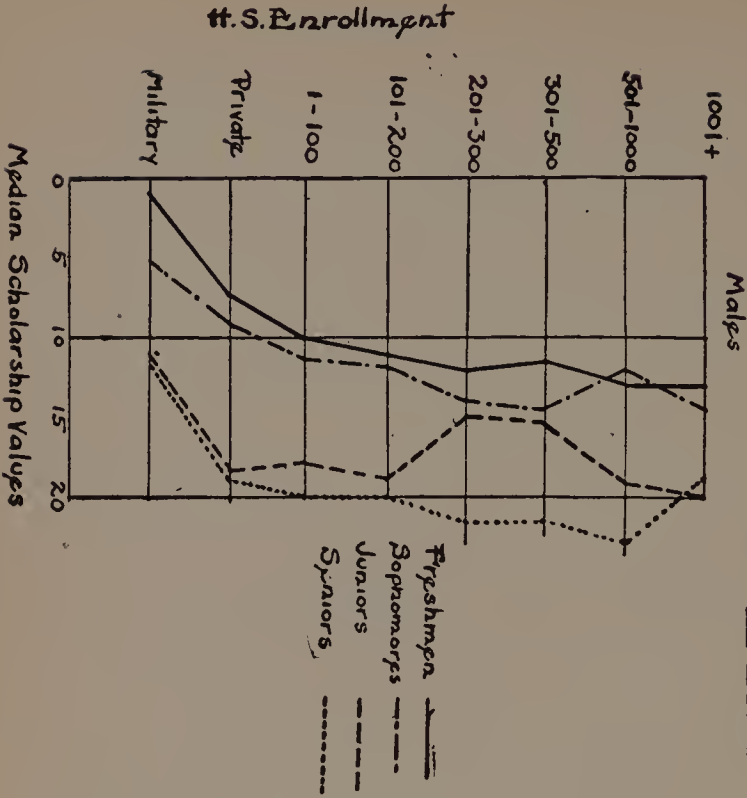
SIZE OF HIGH SCHOOL AS RELATED TO COLLEGE RETENTION.

Table 29 shows the percentages of college students entering from high schools of different enrolments who were retained from year to year. These data appear again in Graph XVI.

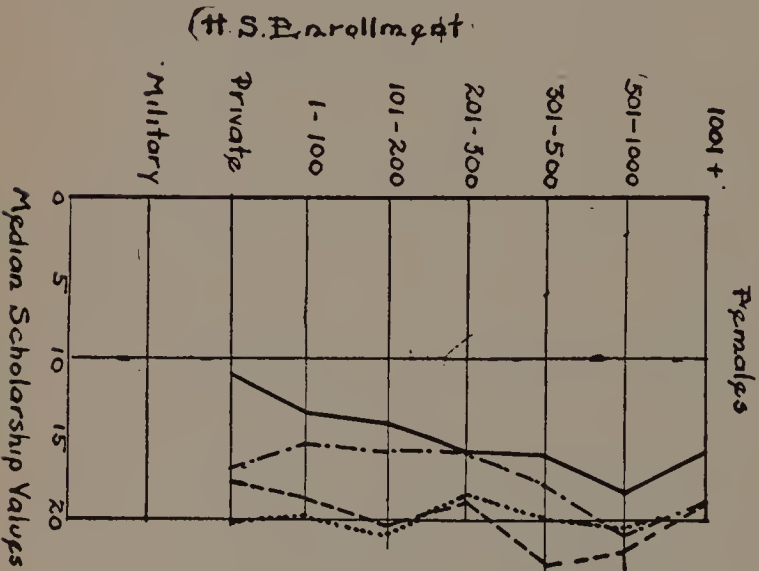
TABLE 29

Retention in Percentages of Students Entering College from Military and Private Schools, and from Public Schools of Different Enrolments

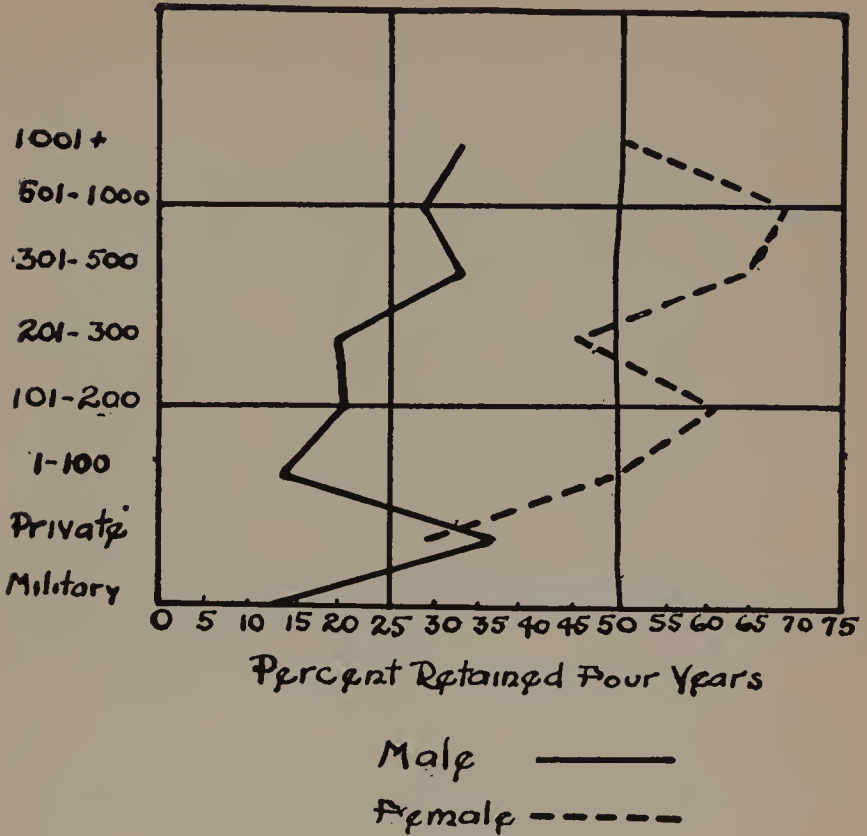
Type and Size of School	Males			Females		
	Percent Retained as Sophomores	Percent Retained as Juniors	Percent Retained as Seniors	Percent Retained as Sophomores	Percent Retained as Juniors	Percent Retained as Seniors
1-100	54.3	33.9	13.6	79.3	60.3	48.3
101-200	74.5	43.1	19.6	75.8	64.5	59.7
201-300	71.4	38.1	19.0	79.3	58.6	44.8
301-500						
501-1000	65.2	34.7	30.4	88.9	72.2	66.7
1001+	68.3	47.6	34.1	75.0	62.5	50.0
Private	72.7	45.4	36.4	50.0	40.6	28.1
Military	50.0	25.0	12.5	...	...	...



GRAPH XV.



COMPARATIVE SCHOLARSHIP OF STUDENTS ENTERING FROM MILITARY AND PRIVATE SCHOOLS AND FROM PUBLIC HIGH SCHOOLS OF DIFFERENT ENROLLMENTS.



GRAPH XVI.

COMPARATIVE COLLEGE RETENTION OF STUDENTS ENTERING FROM MILITARY AND PRIVATE SCHOOLS AND FROM PUBLIC HIGH SCHOOLS OF DIFFERENT ENROLMENTS.

1. For the males the private schools showed the largest retention of students to the fourth college year. This persistence is surprising in view of the fact that graduates of these schools showed inferior scholarship in college. However, the military-school graduates showed the smallest percentage of retention, as well as the lowest scholarship; while of the public-school graduates, those from the larger schools showed a higher retention than did those from the smaller schools.

2. For the females the private-school graduates showed the smallest percentage of retention. Public-school graduates showed

in general the tendency just described for the males, but less consistently. Notable exceptions are seen in the groups representing school populations of 201 to 300 and of "over 1000." Reference to Graph XV recalls the fact that these groups were also deficient in scholarship. The deficiency in the "more than 1000" group has been accounted for, but the cause of the deficiency, both in scholarship and retention, in the 201 to 300 pupil group is obscure.

While there are obvious discrepancies in both sex-curves, probably owing to insufficient cases, the net result agrees with the principle already advanced that inferior scholarship is closely correlated with low retention and high elimination.

SECTION 3

SIZE OF HIGH SCHOOL AS RELATED TO HIGH-SCHOOL SCHOLARSHIP.

The evidence which has been advanced shows quite clearly that public-school graduates showed greater efficiency in college than did the military- and private-school product, and that the graduates of the larger schools did better work than the graduates of the smaller schools.

A new problem now confronts us. Was the greater college efficiency of the graduates of some schools due to an actual superiority of those schools as college-preparatory institutions, or can the phenomena be accounted for as the outcome of selection? It is possible that the students representing the larger public schools were among the best products of those schools, while the smaller public school, and the private and military schools, were represented more largely by their inferior product.

A clear solution of this issue can come only from a study of the high-school rankings of the graduates of the respective schools. As much of such a study as it is possible for us to make appears in Table 30. Unfortunately, the number of students for whom these records were obtained is small as compared with the total number of college students. For this reason, Table 31 is introduced, to portray the college scholarship of the same students whose high-school ranking is set forth in Table 30.

Table 30 corresponds to Table 25 in Chapter VI. Here as there, and for the same reason, *the smaller the rank value* appearing

in the columns for the median and the first and third quartile pupils, *the better the scholarship rank.*

Inspection of Tables 30 and 31 furnishes no conclusive answer to our question. It is clear that while the private schools were represented by their best product, their graduates did very inferior work in college. Private schools seem, therefore, to be inferior to public schools as college-preparatory institutions.

But the different groups of public-school graduates show no clear tendencies. An insufficient number of cases is the probable cause. In general, it appears that the larger schools sent a slightly better grade of their students to college than did the smaller schools. If this be correct, then the college superiority of the larger-school graduates may be due partly or wholly to this selection, and not to the inferior efficiency of the smaller schools. However, the tendencies here displayed are not consistent, and the data are clearly insufficient. The writer accordingly lays no stress upon these tables.

SECTION 4

SIZE OF CLASS IN HIGH SCHOOL AS RELATED TO COLLEGE EFFICIENCY

It is popularly supposed that size of class is a matter of considerable importance in determining the quality of school instruction. We have therefore sought to discover any relationship which might obtain between size of class in high school and the later college work of high-school graduates.

The same problem has been attacked from a different angle by several writers.

Cornman³ in 1909, reached the conclusion that the size of the recitation group was not an important factor in deportment nor in the quality of the daily work. Bachman⁴ and Boyer⁵ agree that large classes did not affect the promotion rate to any noticeable degree.

³Cornman, O. P. Effect of size of class on school progress. *Psychological Clinic*, Dec., 1909.

⁴Bachman, F. P. *Report of N. Y. Committee on School Inquiry*, Vol. I, Part II.

⁵Boyer, P. A. Size of class and promotion rate. *Psychological Clinic*, May, 1914.

Rice⁶ reached the conclusion that "large classes ranked high as often as small classes when tested for arithmetical abilities." In a recent study embracing 1348 classes and 35,573 pupils, Harlan⁷ comes to the following conclusions:

"(1) The effect of the size of the class on promotion rate, though slight, is in favor of 30 pupils or less.

"(2) Large classes seem to be a factor in producing withdrawals.....

"(3) Medium sized classes (30 to 45 pupils) seem to do better work in arithmetic than either very large or very small classes.

"(4) The opportunity of the pupils to participate in the work of the recitation is somewhat more limited in large than in small classes.

"(5) In the results obtained from the data at hand the efficiency of large classes over that of small classes is not apparent when measured by the attention given during the recitation, by the time spent in routine activities of the classroom, and by the time wasted in the study period.

"In the light of these conclusions the class of median size (23 pupils) seems too small for the most economical administration of our schools. Small classes are expensive since they increase the cost per pupil. This added expense does not seem justified..... If one wishes to secure higher promotion rates, higher scores in arithmetic, better attention and wider participation in class work, more efficient class management and better study habits, these things can undoubtedly be secured through improved methods of instruction and more efficient supervision of the larger classes rather than through a reduction in the size of class."

It is almost axiomatic to say that a very high correlation exists between the number of pupils per teacher in any school and the general size of the classes in that school. If evidence be regarded as essential upon this matter, it may be found in the bulletin by Counts to which we have several times referred. We are able to present a grouping of the graduates of the various high schools involved in this study in terms of the number of pupils per teacher in each school. Five classes have thus been formed, consisting of the representatives of (1) schools enrolling 15 or fewer pupils per teacher, (2) schools with from 16 to 20 pupils, (3) those with from 21 to 25 pupils, (4) those with from 26 to 30 pupils, and (5) schools with more than 30 pupils per teacher. The last group was not further divided, because there were few representatives from schools with more than 35 pupils per teacher, and nearly all of these were in one school in which the number per teacher was 36.

⁶Rice, J. M. *Scientific Management in Education*. Chapter IV.

⁷Harlan, Chas. L. Size of class as a factor in schoolroom efficiency. *Educational Administration and Supervision*, March, 1915.

TABLE 30

Comparative High School Scholarship, in Terms of the Quartile Position of the Median, and the First and Third Quartile Students, of Students from High Schools of Different Sizes and Types. (The smaller the figure representing scholarship, the higher the scholarship rank.)

High School Enrolment	Males					Females				
	Number of Students	Median Scholarship	Middle 50 Percent		Number of Students	Median Scholarship	Middle 50 Percent		Number of Students	3d Quartile
			1st Quartile	3d Quartile			1st Quartile	3d Quartile		
1-100	33	3.6	1.8	4.9	39	2.8	1.9	3.6		
101-200	49	3.2	1.7	4.4	45	2.8	1.8	4.1		
201-300	14	2.3	1.9	4.1	18	3.6	2.25	4.6		
301-500	3	2.0	..	..	6	1.75	1.4	4.25	
501-1000	..	..	..	..	..	..	..	..
1001+	21	3.0	1.6	3.9	47	2.8	2.0	3.8		
Private	2	1.5	..	..	9	2.0	1.5	5.25	

TABLE 31

College Scholarship of Those College Entrants Whose High-School Scholarship is Known

High School Enrolment	Males					Females				
	Number of Students	Median Scholarship	Middle 50 Percent		Range of Scholarship Value	Number of Students	Median Scholarship	Middle 50 Percent		Range of Scholarship Value
			1st Quartile	3d Quartile				1st Quartile	3d Quartile	
1-100	33	9	0	15.5	-8 to 26	39	13	7	19	-6 to 26
101-200	49	11	4.5	17	-10 to 30	45	14	8	17.5	-6 to 28
201-300	14	11	1.75	17	-8 to 29	18	16.5	14	19.5	6 to 26
301-500	3	16	..	..	7 to 18	6	16	9.25	21.75	1 to 27
501-1000	..	..	..	..	..	..	..	..	..	..
1001+	21	15	5	19.5	1 to 27	47	15	9	18	-6 to 30
Private	2	9.5	..	..	3 to 16	9	12	5	15.5	-4 to 18

In studying the effect of class-size it is necessary to exclude the factor of size of school. Counts and others have shown that large schools generally mean large classes, and it is clear from earlier sections of this chapter that the product of the larger schools shows the greater college efficiency. The presence of this factor, therefore, would tell for the superiority of large classes.

This disturbing factor can be practically eliminated by retaining the six groupings of schools already made upon the basis of

TABLE 32

Relation between Scholarship of College Students and the Number of Pupils per Teacher in the High Schools from Which They Come Both Sexes Combined.

High School Enrolment	Pupils per Teacher	Number of Students	Median Scholarship	Middle 50 Percent		Range of Scholarship Values
				1st Quartile	3d Quartile	
1-100	1-15	29	11	5.9	18.0	-8 to 29
	16-20	23	11	6.0	15.0	-8 to 28
	21-25	38	10.5	7.7	14.0	-8 to 29
	26-30	17	11	4.5	16.0	-8 to 19
	31+	8	14.5	8.5	21.3	8 to 26
101-200	1-15	9	13	7.0	22.5	6 to 27
	16-20	32	11	6.3	18.0	-10 to 28
	21-25	39	11	7.0	16.0	-6 to 27
	26-30	23	15	4.0	18.0	-6 to 28
	31+	11	12	6.0	15.0	-2 to 20
201-300	1-15	..	..	..	...	.....
	16-20	1	-2	..	...	.....
	21-25	21	12	8.0	15.5	-6 to 22
	26-30	18	17	11.3	19.3	4 to 25
	31+	8	16	14.3	24.5	11 to 25
301-500	1-15	..	..	..	...	.....
	16-20	3	9	..	...	7 to 20
	21-25	65	16	9.0	18.5	-2 to 30
	26-30	9	15	5.5	16.0	-6 to 20
	31+	2	13	...	...	11 to 15
501-1000	1-15	..	..	..	...	.....
	16-20	1	-5	..	...	12 to 20
	21-25	2	16	..	...	-6 to 25
	26-30	24	14.5	8.8	19.8	10 to 14
	31+	2	12	..	...	.....
1000+	1-15	..	..	..	...	.....
	16-20	..	..	..	...	.....
	21-25	..	..	..	...	.....
	26-30	7	21	8.0	28.0	-2 to 28
	31+	282	15	8.5	20.0	-8 to 32

enrolment, and by then dividing each of these groups into five smaller groups according to the number of pupils per teacher. This procedure yields Table 32, which is self-explanatory.

The table shows a few consistent tendencies. The "26 to 30 pupils-per-teacher" group seems generally to lead the others, with occasional exceptions in favor of the "21 to 25" and the "31-plus" groups. In general, the schools with more than 20 pupils per teacher, and less than 31, lead those with 20 or fewer, and with more than 31. It seems safe to say, therefore, that high-school graduates coming from schools enrolling more than 20 and fewer than 31 pupils per teacher do a better grade of work in college, than those coming from schools with smaller or larger classes, irrespective of the total enrolment of the schools.

One other conclusion follows from inspection of the table. Schools enrolling fewer than 200 pupils show a greater range in the number of pupils per teacher, than do the schools enrolling more than that number. In general, also, the smaller schools are marked by smaller classes, and the larger schools by larger classes—a result which corroborates the findings of other workers.

SECTION 4

SUMMARY

1. Graduates of military and private schools show a college efficiency inferior to that displayed by public-school graduates.

2. Among public-school graduates, the better marks and the greater retention are found in the product of the larger schools.

3. The inferiority in college of the private-school graduates is clearly due to the inferiority of the private school as a college-preparatory institution.

4. So far as our data go, the superiority shown in college by the graduates of the larger over those of the smaller schools, may or may not be due to the superiority of the larger schools as college preparatory institutions. At present we can only conclude that, whatever the reason, graduates of the larger high schools may be expected slightly to surpass the graduates of the smaller high schools, when both reach college.

5. Irrespective of the total enrolment, graduates of high schools enrolling more than 20 and fewer than 31 pupils per teacher earn better marks in college than the graduates of schools enrolling 20 pupils or less, or more than 30 pupils per teacher. Within the limits of the study, therefore, the evidence favors the product of classes ranging from 21 to 30 pupils.

CHAPTER VIII

GENERAL SUMMARY

The following statements are fairly derived from the evidence which has preceded.

1. High-school graduates who entered college before 18 years of age did better work and remained longer in school than those who entered at 18 or later. Graduates who entered after 19 years of age did poorer work and left school earlier than did those who entered at 19 or younger. There were, of course, numerous individual exceptions to both statements.

These statements do not mean that all high-school students should be hurried into college before 18 or, at the latest, 20 years of age. The superior college efficiency of the younger entrants was correlated with their superior efficiency in the high school, which was responsible for their early graduation therefrom, and early entry into college. Conversely, the college inferiority of the late entrants was correlated with late graduation from high school, because of the inefficiency which they showed there. All that can be said with confidence as a result of this investigation, is that the college may expect in general that its younger entrants will stay longer than its older entrants and will do a superior grade of work.

2. Graduates of public schools did better work in college than graduates of military, private, and church schools. In general, they also tended to remain longer. Private and church schools were clearly inferior to public schools as college-preparatory institutions.

3. Graduates of the large public schools, speaking in terms of enrolment, showed greater college efficiency, both in marks and retention, than did graduates of the smaller public schools. It is not clear to what extent selection was responsible for this difference, nor, on the other hand, to what extent the larger schools were the better preparatory institutions. In general, the larger the schools the greater was the college efficiency of its graduates; this seems to have been the rule.

4. Schools enrolling from 21 to 30 pupils per teacher seemed to produce better college students than schools with fewer or with more pupils per teacher. This result is somewhat different from that reached by other students of the same problem, who found either no difference whatever in the efficiency of classes of different size, or a difference favoring classes of about 30. It should be noted that the present study has eliminated the factor of size of school, which, because large schools mean large classes, and because large schools mean greater efficiency, is a factor tending to distort the value of large classes.

5. The superiority of the female entrants over the males, in both scholarship and retention, appears throughout the study. The students of the two sexes who finished the college course, however, showed little difference in scholarship at any point.

6. The teachers of the advanced college classes of the junior and senior years gave better marks than were given by the teachers in the freshman and sophomore years to the very same pupils. Statistically, these pupils should, if anything, have received lower marks on the average during the later years, owing to the elimination of poor students during the first two years. It is clear that scholarship standards did not rise proportionally with the increase in student ability through elimination. Such a rise in standards is assumed to obtain by those who advocate the distribution of marks according to the normal curve throughout the college course.

7. There is some evidence, though insufficient for anything approaching conclusive proof, that the lapse of an interval of a year or more between high-school graduation and college entrance contributed to greater efficiency when college was once entered.

8. Elimination from college was highly qualitative; the good students tended to remain and the poor ones to go. This qualitative elimination was greatest in the freshman year, less but still important in the sophomore year, and insignificant in the junior and senior years.

THE SEVENTEENTH YEARBOOK

OF THE
NATIONAL SOCIETY FOR THE STUDY
OF EDUCATION

PART I
THIRD REPORT OF THE COMMITTEE ON
ECONOMY OF TIME IN EDUCATION

BY

H. B. WILSON, H. E. MITCHELL, ALICE CAMERER, M. E. BRANOM, W. C. REAVIS
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PUBLIC SCHOOL PUBLISHING COMPANY
BLOOMINGTON, ILLINOIS

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Published February, 1918

**First printing, February, 1918, 2,500 copies
Second printing, June, 1919 1,500 copies
Third printing, August, 1923, 550 copies**

**Composed and Printed by
Public School Publishing Company
Bloomington, Illinois**

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This Part of the Seventeenth Yearbook is the 1918 report of the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education.

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EDITOR'S PREFACE

The National Society for the Study of Education takes much satisfaction in extending its columns now for the third time to the Committee of the Department of Superintendence on Economy of Time in Public School Education. The earlier reports of this Committee (*Fourteenth Yearbook, Part I* and *Sixteenth Yearbook, Part I*) were received with approbation by members of the Society and furnished material for interesting programs at its Cincinnati and Kansas City meetings; their subsequent sale shows that members of the educational profession generally have found them stimulating for discussion and valuable in planning improvements in the course of study in the elementary school.

Advantage is taken of early necessity for reprinting the present Yearbook to insert the Introduction prepared by the Chairman of the Committee which was unavoidably omitted in our effort to complete the first printing in time for the Atlantic City meeting in the face of unusual difficulties of manufacture and transportation.

G. M. W.

INTRODUCTION

REPORT OF COMMITTEE ON ECONOMY OF TIME IN PUBLIC EDUCATION

H. B. WILSON

Chairman of Committee, Superintendent of Schools, Topeka, Kansas

Through the medium of this volume, the Committee on Economy of Time in Public Education of the Department of Superintendence of the National Education Association presents its third report of progress. Previous reports were presented in the publications of this Society, as Part I of the Fourteenth and Sixteenth Yearbooks.

In this and preceding reports attention is directed mainly to formulating, upon the basis of research studies, the minimal essentials in the various subjects of the elementary schools. The following table summarizes both the subjects of study discussed and the number of pages devoted to each:

Subject	Part I 1915	Part I 1917	Part I 1918	Total
Reading	24 pages	16 pages	6 pages	46 pages
Handwriting	17 "	13 "	—	30 "
Spelling	12 "	12 "	—	24 "
Language, Composition and Grammar	26 "	26 "	17 "	69 "
Arithmetic	15 "	32 "	20 "	67 "
Geography	6 "	— "	13 "	19 "
History	11 "	30 "	32 "	73 "
Civics	—	—	27 "	27 "
Literature	6 "	27 "	—	33 "
Physical Education	—	20 "	—	20 "

It will be observed that all of the subjects of the elementary curriculum have been considered from the standpoint of minimal essentials, with the exception of music, drawing or art, elementary science, or nature study, and the manual and household arts. An investigation pertaining to the content of elementary science, or nature study, has been almost ready for publication for two years; likewise, a study of art or drawing is almost ready for publication. Considerable work has been done also toward the determination of

the minimal essentials in music, but this study is not so near completion. No investigation of the minimal content in the manual or household arts has been begun, so far as this Committee's work is concerned. In view of the quantity of the sales on each of the *Yearbooks* and of the investigations modeled on those printed in the *Yearbooks* which are under way in the departments of education of the normal schools and universities of the country, and in view of the effects these reports have produced in modifying courses of study, the Committee regrets that it has been impossible to complete formulations on the subjects which have not thus far been investigated. We believe that as early as possible, either through this Committee or some other agency, the Department of Superintendence should encourage the scientific study and investigation of the content of the elementary curriculum. The studies thus far investigated should be extended, and studies should be immediately arranged for in those subjects not reported upon thus far.

In closing its report before the Department of Superintendence one year ago, the Committee promised that the following lines of work should be pursued with all earnestness during the year which closes with the meeting of the Department.

“1. Its efforts to state the minimal content in the elementary-school subjects will be further extended by including geography, music, elementary science, and drawing, thus completing, as far as is possible, the work on the reduced content in the elementary-school subjects, interpreting all its recommendations regarding content finally in relation to economy of time.

“2. Arrangements have been completed for starting the work of three committees in the field of method. One, in charge of W. C. Bagley, of the University of Illinois, will formulate the ‘Objectives of Elementary Education on the Basis of the Minimal Content of the Elementary-School Subjects.’ Coordinately, another committee, in charge of Frank E. Thompson, of the University of Colorado, will formulate the ‘Purpose of Education in Terms of Activities.’ Another committee, consisting of Messrs. Bobbitt, Charters, Coffman, Horn, Kilpatrick, Stone, and Wilson will take up the ‘Minimal Essentials’ in each subject as they have been recommended in the *Fourteenth* and *Sixteenth Yearbooks* and as they may be recommended in later publications, and endeavor to organize this content into the successive problems which should be mastered by the pupils from grade to grade in each of the subjects.

“3. In the field of organization we propose to start a committee to work at once, under the direction of Dean H. L. Smith, of Indiana University, making a survey of the efforts being made above the sixth grade in this country which are resulting in the saving of time between the sixth grade and graduation from the high school. This survey will be made in such a way as to permit a quantitative report of the results of the survey.

“4. As soon as the report of the Commission on Reorganization of Secondary Education is available in printed form, we shall constitute the committee necessary to review the report from the standpoint of the organization of the teaching content of each subject as recommended in such way as to determine where savings may be made.

“5. Arrangements have already been completed whereby a study will be made, under the direction of George D. Strayer, of Columbia University, of the extension of school time, both the day and the year, in relation to economy of time.”

The progress in the first and second of these proposals is reported in Part I of the *Seventeenth Yearbook*. One hundred fifteen pages are devoted to reporting the investigations. Eighty-nine pages are devoted to minimal essentials and twenty-six to the purposes of historical instruction in the seventh and eighth grades. In the further investigation of minimal essentials, two studies are concerned with the content of arithmetic; one with geography; one with reading; one and a brief summary, with English; two with civics; one with history. The initial study on objectives in elementary education is a symposium on history organized and carried to completion under the leadership of Dr. W. C. Bagley. The symposium occupies twenty-six pages and is concerned with the purposes of historical instruction in the seventh and eighth grades.

All of the studies of this *Yearbook* and of the preceding *Yearbooks* containing our reports are concerned with determining the materials which should be incorporated in the course of study of the subject under investigation, by finding out what people who are living and working successfully outside the school find need to be able to do, and by determining accurately just what information and skills they need to employ in doing their work successfully.

In his study of “Some Social Demands of the Course of Study in Arithmetic” Mr. Mitchell gathered data from four sources—a standard cook book, the payrolls of a number of factories, marked-

down sales advertisements, and a general hardware catalogue—by which he determined what the character of arithmetic taught in the schools should be to enable persons to solve the problems which would arise from any of the four sources. He found a great frequency of small numbers, especially of fractions and mixed numbers. He found the dozen as a unit of production and trade should be taught and in connection therewith, that the aliquot parts of 12 should be taught.

In her study on "What Should Be the Minimal Information about Banking" Miss Camerer sought to learn what bank employees think the citizens of their communities ought to know about banking. She mailed an inquiry to 50 bank employees and received 35 returns. She also submitted the same inquiry to the parents of the children in the University of Iowa Elementary School. There were 55 items in the inquiry, and the study reports the order of importance assigned each item by the total returns from the bank employees and from parents. From the replies received as to what the citizens of a community ought to know about each item, a composite statement was prepared to show what ought to be taught about each item. The study closes with a bibliography containing 24 references.

In their study of "The Determination and Measurement of the Minimal Essentials of Elementary School Geography" Mr. Branom and Mr. Reavis summarized previous studies to determine minimal essentials in geography. In earlier studies the emphasis has been put almost exclusively on place geography. In this investigation it is held that any list of minimal essentials in geography that does not emphasize relational facts as well as facts of place is inadequate. The investigators attempt to set up certain standards for the selection of the facts which should be learned and for the relations that should be recognized and appreciated. The method of study is clearly set forth throughout. The study closes with a completion test for the measurement of minimal geographical knowledge of elementary school children.

In his study of "The Vocabularies of Ten Second-Year Readers" Mr. Housh has determined scientifically the vocabulary of ten second readers in common use in American elementary schools. He

has endeavored to find a basis for measuring the quality of readers, in so far as the vocabulary of these readers is a factor in determining their worth. He has determined the entire vocabulary of each of the ten readers, their common vocabulary, then compared the vocabulary of the method and content readers and showed by means of the vocabularies the relations between these two kinds of readers. The readers used as a basis for the study, the method of procedure, and the results obtained, are set forth in detail.

In his report on "Composition Standards in the Elementary Schools" Mr. Hosie shows the sort of composition scale which resulted from the selection of compositions of different degrees of excellence by the method of general judgment rather than by exact, scientific procedure. Compositions of each grade of excellence are printed for each grade.

Following this study, Mr. Hosie has also summarized ten recent investigations in the field of English.

Mr. Bassett reports the results of an investigation of "The Content of the Course of Study in Civics." He sought to find "what are the most significant and most persistent problems of the American people which seek solution through the machinery of government." As a basis for answering his inquiry, he analyzed the national platforms of all political parties since 1832, the state platforms in non-presidential years since 1889 in so far as they dealt with national issues, all of the state platforms of the major parties in 1910, the platforms of the major parties in California, Indiana, and New York since 1850, all of the platforms of the parties in Iowa since 1889, and the platforms of one southern state. The method of analysis, the classification of topics, and the results found are presented in detail. The conclusions which seem justified by the study are summarized in two concluding pages.

In his study of "The Historical Information Necessary for the Intelligent Understanding of Civic Problems" Mr. Bassett sought to discover what history is most necessary to the intelligent understanding of modern political problems, conditions, and activities. The study was of a character similar to that reported by Horn a year ago in Part I of the *Sixteenth Yearbook* on "Possible Defects in the Present Content of American History as Taught in the

Schools." The basis for the study and the method of procedure are exhibited clearly and the results summarized in the concluding five pages.

"A Method of Determining Misplacements of Emphasis in Seventh and Eighth-Grade History" is reported by Mr. Marston, Mr. McKown, and Mr. Bagley. The study extends the report of the last-named writer in the *Sixteenth Yearbook*, and attempts to determine some misplacements in present-day and recent elementary history teaching. Certain criteria by which to measure present practices are established and these are applied to a limited area of the field for the purpose of testing the method of procedure. Only the names of persons that are given prominence by 25 elementary textbooks in American history between 1765 and 1865 are subjected to investigation. The method of the study is fully explained and the results and interpretations are reported in the concluding four pages.

The "Symposium on the Purposes of Historical Instruction in the Seventh and Eighth Grades" carries an introduction and summary by Mr. Bagley and brief papers on the general topic by Messrs. Dealey, Ellwood, Greene, Hart, Mace, Snedden, and an anonymous contributor. The effort in the symposium is to formulate aims or objectives for the teaching of elementary history and to evaluate current aims and objectives. The emphasis is upon "what ought to be" taught from the point of view of realizing national ideals. In the summary, Mr. Bagley tersely states the conclusions which seem justified by the symposium.

The committee regrets that certain studies which had been projected for this *Yearbook* could not be finished in time for inclusion in it. Reference is made particularly to the survey by Dean H. L. Smith, of Indiana University, of the efforts in the schools of this country to save time between the sixth grade and the close of the high school. This investigation is a very thorough and extended one. Arrangements are now pending whereby it will be possible to issue it in some form so that the excellent service it should render may be had immediately. An excellent report on the Course of Study in Agriculture and Nature Work, prepared by Mr. J. W. Myer, of the University of Iowa, is being held for use in a later

report of the committee. Likewise, a Critical Summary of the Courses in Spelling, prepared by Professor Hugh C. Pryor, of the University of Colorado, must be deferred for future publication. This is an excellent and thorough summary and will be of value to teachers and administrators whenever it can be made available.

The various meetings of the committee and the correspondence of the year have brought to light many other problems not yet reported upon or under study, which are of great significance in relation to economy and efficiency in education. The committee is concerned to make progress upon these topics and problems as rapidly as possible. The committee is indebted to many members of this Society for suggestions and constructive help. It is anxious, as in the past, to have suggestions as to work which should be undertaken and criticism of any of its published results.

H. B. WILSON, *Chairman*
J. F. BOBBITT
V. A. C. HENMON
F. M. HUNTER
F. E. SPAULDING
F. A. THOMPSON
O. I. WOODLEY.

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SECTION I

STUDIES OF MINIMAL ESSENTIALS IN ELEMENTARY SCHOOL SUBJECTS

CHAPTER I

SOME SOCIAL DEMANDS ON THE COURSE OF STUDY IN ARITHMETIC

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The following study¹ is presented to illustrate the use which the author is making of the statistical method in discovering and in determining the relative importance of the various content elements of the course of study in arithmetic. Some examples of content elements, illustrating what is meant by the term, are "1-6 gross," " $\frac{1}{3}$ cup," " $\frac{7}{8}$ yard," "price per dozen," "4 $\frac{5}{12}$ dozen articles made," and "10% off regular price." An index of the relative importance, from the standpoint of social usage, of the different content elements is found in the frequency of their occurrence and in the manner of their use, *i. e.*, whether used in computations or merely as descriptive terms.

The data presented below are taken from four sources, *viz.*, a standard cook book, the pay rolls of a number of artificial flower and feather factories, marked-down-sales advertisements, and a general hardware catalog. These data are, accordingly, concrete stuff out of which arise arithmetical problems of housewives, wage earners, consumers, and retail hardware dealers, respectively. The data are typical of the sort which must be gathered from many sources and made the basis of selection of the problems and drill exercises which are to constitute the course of study in arithmetic.

¹This report is part of a study carried on in Teachers College, under the direction of E. L. Thorndike, during the year 1916-1917.

TABLE I
Frequency of Occurrence of Cooking-Recipe Quantities in One of the Most Widely Used Cook Books.

	1/8	1/4	3/8	1/2	2/3	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	1 7/8	2	2 1/8	2 1/4				
Teaspoons	97	218	22	305	6	41	3	283	4	47	3	47	5	64						
Tablespoons	1	4	2	122	2	23	315	4	5	4	65	425	4	241	1	3				
Cups	4	450	1	314	522	101	151	18	634	1	42	10	32	171	10	32				
Pints				1	1	1	21	81												
Quarts				1	1															
Gallons																				
Pecks				5			4	7												
Ounces				7			2													
Pounds	1	17	3	52	1	9	46	3												
Units	2	29	12	112	5	1	443	1			1	16								
Totals	105	718	1	353	1127	116	225	21	1836	1	55	1	40	300	10	87	4	1101	1	3

	2 1/2	2 3/4	3	3 1/4	3 1/2	3 3/4	4	4 1/4	4 1/2	5	6	7	7 1/2	8	9	10	12	18	20	2 doz.
Teaspoons	13		50	6	25	3	3	3	4 3/4	7	1									
Tablespoons	22		186	4	62	2	2	2	2	10	7									
Cups	3	36	67	8	14	3	65	3	2	11	11		1							
Pints			9																	
Quarts	1		7		4															
Gallons																				
Pecks																				
Ounces	4		22	1	15		2		1	1	5	1		2		1				
Pounds	2		148	1	95	1	32	86	4	32	86	4	1	34	2	6	19	2		11
Units																				
Totals	8	78	2	7	484	8	26	3	266	11	2	70	110	5	2	36	7	19	2	11

A. *Data from the cook book.* Table I gives the frequency of occurrence of cooking-recipe quantities found in the cook book examined. Thus $\frac{1}{8}$ teaspoon was found 97 times, $\frac{1}{3}$ cup was found 314 times, etc. Of all quantities noted, the number *one* was most frequent, occurring 1836 times, while *one-half* ranks second in frequency and occurs 1127 times. The median quantity is *one*.

The quantities of Table I were taken from recipes intended for six persons—the thirty or forty other recipes in the book being ignored. Consequently, the arithmetical complications which arise in adapting the recipes for fewer or a greater number than six persons consist, for the most part, of taking $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$, or $1\frac{1}{2}$ times the various recipe quantities such as $\frac{1}{8}$, $1\frac{2}{3}$, etc. Other fractional parts or multiples of six which might arise in adapting a given recipe are probably secondary in importance.

The most striking feature of Table I is the predominance of small numbers. Another striking feature of the table is the great frequency of fractions and of mixed numbers. Very significant also is the fact that thirds occur as frequently as they do. They occur, indeed, four times as frequently as eighths, half as frequently as fourths, and a third as frequently as the fraction one-half.

B. *Data from factory pay rolls.* Table II gives the frequency of occurrence of quantities in dozens found in the weekly pay rolls

TABLE II
 QUANTITIES IN DOZENS WHICH ARE ADDED TOGETHER OR ARE MULTIPLIED
 BY INTEGERS, DECIMALS AND MIXED NUMBERS IN RATES PER
 DOZEN IN COMPUTING THE WAGES OF PIECE WORKERS.
 (From the Pay Rolls of 10 Artificial Flower and Feather
 Factories, New York, 1916.)

Dozens	Frequency	Dozens	Frequency	Dozens	Frequency	Dozens	Frequency
$\frac{1}{12}$	442	$1\frac{1}{4}$	8	4	40	11	2
$\frac{1}{6}$	18	$1\frac{1}{3}$	3	$4\frac{1}{12}$	1	12	8
$\frac{1}{4}$	292	$1\frac{5}{12}$	2	$4\frac{1}{2}$	5	$12\frac{1}{2}$	1
$\frac{1}{3}$	130	$1\frac{1}{2}$	25	$4\frac{2}{3}$	1	15	2
$5\frac{1}{12}$	31	$1\frac{2}{3}$	1	5	16	$15\frac{1}{2}$	1
$\frac{1}{2}$	528	$1\frac{3}{6}$	2	$5\frac{1}{6}$	1	$15\frac{2}{3}$	1
$\frac{7}{12}$	16	$1\frac{3}{4}$	3	$5\frac{1}{2}$	4	16	1
$\frac{2}{3}$	13	2	101	$5\frac{3}{4}$	1	$17\frac{1}{2}$	1
$\frac{3}{4}$	15	$2\frac{1}{12}$	1	6	24	18	4
$\frac{5}{6}$	8	$2\frac{1}{4}$	2	$6\frac{1}{2}$	3	$19\frac{1}{2}$	1
$9\frac{1}{12}$	1	$2\frac{1}{2}$	12	7	6	20	3
$10\frac{1}{12}$	2	$2\frac{7}{12}$	2	$7\frac{1}{2}$	1	21	1
$11\frac{1}{12}$	5	$2\frac{11}{12}$	2	8	1	24	4
$12\frac{1}{12}$	1	3	59	$8\frac{1}{2}$	1	25	1
1	476	$3\frac{1}{3}$	1	$8\frac{2}{3}$	1	47	1
$1\frac{1}{12}$	3	$3\frac{1}{12}$	1	9	3		
$1\frac{1}{6}$	4	$3\frac{1}{6}$	2	$9\frac{1}{2}$	1		
$1\frac{1}{2}$	1	$3\frac{5}{6}$	2	10	7		

of 100 piece workers (*i. e.*, workers paid on the basis of number of pieces or commodities made) selected at random from 300 records examined in ten artificial flower and feather factories, New York, 1916. The table is read: certain workers, selected at random, made $1/12$ dozen articles (at a given rate per dozen), 442 times, $1/6$ dozen articles 18 times, $1/4$ dozen articles 292 times, etc.

To compute accurately the earnings of any given worker, it is necessary to add to get the total number of dozens of articles made at each of the different rates per dozen, and then to multiply together each given rate per dozen and the total number of dozens of articles made at that rate. The arithmetical processes involved are, therefore, addition of all possible fractions with 12 as denominator to integers and mixed numbers—the fractional parts of the mixed numbers likewise include all possible fractions with 12 as denominator; multiplication by a fractional, integral, or mixed number of dozens, of decimals in terms of dollars and cents; and addition of United States money. The following exact copy of a pay roll record of one piece worker for one week, will serve as an illustration.

No. made	Rate per dozen	Earnings
$\frac{1}{3}$ doz.	2.25	.75
$\frac{7}{12}$ doz.	2.50	1.45
$\frac{1}{3}$ doz.	2.50	.83
$\frac{1}{2}$ doz.	2.50	1.25
$1\frac{1}{12}$ doz.	2.50	2.10
$\frac{1}{2}$ doz.	2.50	1.25
$\frac{1}{6}$ doz.	2.50	.42
1 doz.	.55	.55
		8.60

To compute accurately the total earnings of this wage earner for the week one proceeds as follows:

$$\frac{1}{3} \text{ of } \$2.25 = \$.75.$$

$$\frac{7}{12} + \frac{1}{3} + \frac{1}{2} + 1\frac{1}{12} + \frac{1}{2} + \frac{1}{6} = 3\frac{3}{12}, \text{ or } 3 \text{ dozen}$$

$$\$2.50, \text{ the rate per dozen, } \times 3, \text{ the number of dozens, } = \$7.50$$

$$\$.75 + 7.50 + .55 = \$8.80, \text{ total weekly earnings.}$$

The method of solution used in the office of the factory, on the other hand, would lead in this case to an error of one cent in the

total earnings. As a matter of fact, the computation of the factory office in this case is in error 20 cents—1 cent on the $7/12$ dozen lot and 19 cents on the $11/12$ dozen lot.

The question may be asked as to why the factory worker is given his work in such small and odd-numbered lots. Why, for example, did not the worker whose record is given above receive the three dozen articles all at once, or at least in even dozens instead of getting first $7/12$ dozen, then $1/3$ dozen, and so on? The explanation is found in the fact that the orders for goods (which commonly include numerous articles of different styles) coming to the manufacturer are numbered as they are received and each employee, at any given time, is working on an article to fill a particular order. This method of distributing work among employees and the resulting fractions with 12 as denominator were found in 29 other New York factories, including manufacturers of men's and women's hats and of men's, women's and children's clothing. The custom is further encouraged by the universal desire of factory hands to have the available work distributed equally.

Again, the striking features of the data are the predominance of small numbers and of fractions and mixed numbers. The fractions found include and are limited to those having twelve or integral factors of twelve as denominators. The fractions one-half and twelfths are most common, fourths and thirds next, and sixths least frequent.

C. Data from marked-down-sales advertisements. The facts presented in Table III reveal the nature of the arithmetical operations with which the consumer must be familiar in order to understand the advertisements, or to compute the prices of commodities offered, in marked-down sales. The discount rates (including both percental and fractional forms) given in the table are the first 300 seen by the writer and one other person, beginning with February, 1917. Most of them were taken from one New York daily paper, others from store windows and delivery wagons in New York, and a few from newspapers outside of New York. The 300 were secured in approximately three months' time. They are typical for New York City. Because of the commercial importance of New York, it is probable also that further investigation will prove them typi-

Fractional Discounts

$\frac{1}{4}$				3				1					2	2	8
$\frac{1}{3}$			1	2			2	2		1	3		1	6	24
$\frac{1}{2}$		1	6	16	3			2	1	2	5		1	11	57
$\frac{1}{6}-\frac{1}{2}$				2										9	2
$\frac{1}{4}-\frac{1}{3}$				1		1					2			5	11
$\frac{1}{4}-\frac{1}{2}$				1										3	4
$\frac{1}{3}-\frac{1}{2}$				2		1	1					1	1	9	19
Total number of fractional discount rates.....															125
Grand total, fractional and percental rates.....															300

The outstanding feature of Table III is that discount rates, with two notable exceptions, are expressed in percentages,—these exceptions are *one-half* and *one-third*. Of the 300 marked-down rates noted, 70 were sales at half price. Of these 70, 57 are expressed by the fraction $\frac{1}{2}$ and only 13 by 50 percent. Of the 28 sales advertising a third off, 24 express the discount by $\frac{1}{3}$ and only four by 33 $\frac{1}{3}$ percent. Again, the expression “ $\frac{1}{3}$ to $\frac{1}{2}$ off” occurs 19 times while its equivalent, 33 $\frac{1}{3}$ to 50 percent, is found but four times. Thus, of the total number of 125 fractional discount rates noted, exactly 100, or 80 percent of them, are $\frac{1}{3}$ or $\frac{1}{2}$. The only other fractional discount worth noting is $\frac{1}{4}$, which was noted 8 times as a fraction and 21 times as 25 percent. The two most common percental discounts, viz., 20 percent and 10 percent, are never found in fractional form. In all, 119, or 68 percent of the total number of 175 percental discounts noted, are in percentages which are not found in fractional form. On the other hand, all the 125 fractional discounts are sometimes found expressed in their percental equivalents.

In general, the arithmetical operations involved in marked-down sales are 10 percent, 20 percent, and 25 percent off, and $\frac{1}{3}$ and $\frac{1}{2}$ off, the regular prices of furniture, articles of clothing, dry-goods, notions, and house furnishings.

D. *Data from the general hardware catalog.* Table IV summarizes the arithmetical facts found in one wholesale general hardware catalog. Thus, from the table, $\frac{1}{16}$ inch was found four times, $\frac{1}{8}$ inch 4 times, $\frac{11}{64}$ inch once, etc.; 2 feet was found 6 times; 7 $\frac{1}{2}$ ounces was found twice; $\frac{1}{6}$ dozen was given as the number of articles in a box, package, or carton, five times. The list price of 944 different articles was specified as so much per dozen, of 428 articles as so much per gross, etc.

The quantities tabulated in Table IV under units of linear measure appear, for the most part, as descriptive terms only, *i. e.*, they are not used in arithmetical computations. They tell the linear dimensions of bolts, screws, nuts, tanks, etc. The retail hardware dealer must be able to read them and must know what they mean.

The quantities tabulated under units of avoirdupois weight are descriptive of the weights of articles. They may also be used in determining the shipping weight of one or more articles, and in this case would be added together and the sum possibly multiplied by a shipping rate. The weights as they are, in case but one article was ordered, might be multiplied by the shipping rate.

The items of greatest significance in Table IV are found under the headings "Number in Container" and "Price per." The fact that commodities are put up in boxes of a dozen or fractional part of a dozen, and the fact that the list price is a rate per dozen, both mean that computing the cost of any number of commodities less than a dozen would involve fractions having 12 and all the integral factors of 12 as denominators. For example, to find the cost of two articles listed at a rate per dozen, would require taking one-sixth of the list price. In like manner, finding the cost of five articles would require taking 5/12ths of the list price.

Fractions having 12 or integral factors of 12 as denominators also enter into computations for finding the cost of any number of dozen articles less than 12 dozen, when the number of articles in a box or carton is one gross or when the list price is "per gross." Such a case would be finding the cost of 2 dozen commodities listed at so much per gross—1/6th of the list price would be required.

Of significance also, although in a negative way, is the relative unimportance (as indicated by this catalog) of 100 as a unit in the hardware trade. Commodities are listed at a price per hundred only 22 times in a total of more than 1500 prices.

CONCLUSIONS

The following conclusions are subject to the limitations of the data on which they are based. The data do, however, furnish evidence as to some of the arithmetical activities of four groups of individuals. In the cases studied:

1. The great relative frequency of small numbers, especially of fractions and mixed numbers, is significant in its bearing on drill exercises and on the form of problems.

2. It has proved worth while to ascertain the relative frequency of the different fractions and other number magnitudes which are used in the arithmetical computations of a considerable number of people.

3. The prominence of the dozen as a unit of production and of trade suggests the importance of familiarity with the aliquot parts of 12.

4. Although decimalization is one of the distinguishing features of present-day arithmetic, tenths and hundredths play but an insignificant part as units of production and of trade in commodities.

5. Discount rates advertised in marked-down sales are most often expressed in percents—the most notable exceptions are the fractional forms $\frac{1}{3}$ and $\frac{1}{2}$ off. Discounts are practically never expressed as so many “cents on the dollar,” in marked-down sales advertisements.

6. The method employed in this study is feasible and a part of the necessary procedure in the solution of the problem of **what** should constitute the course of study in arithmetic.

CHAPTER II

WHAT SHOULD BE THE MINIMAL INFORMATION ABOUT BANKING

ALICE CAMERER
University of Iowa, Iowa City, Iowa

The primary object of this study¹ was to find out what bank employees think the citizens of their community ought to know about banking. To get this information the questionnaire that follows was mailed to fifty employees of banks. Replies were received from thirty-five persons, representing the states of Illinois, Indiana, Iowa, Kentucky, Missouri, Nebraska, North Dakota, Oregon and Texas. To secure still further information, the same questions were submitted to parents of the children in the University of Iowa Elementary School.

Questionnaire

What, from your experience, do you think the citizens of your community, or of any community, ought to know about the following items? Please state after each item.

1. If knowledge of the item is *very* important put a double check (xx) before it.
2. If knowledge of the item is less important, yet of some value, put a single check (x) before it.
3. If knowledge of the item would be of no value, cross it out.

In the table below the items in question are listed in order of their importance as finally determined by the number of double checks given them by the thirty-five bankers.²

The fourth column shows the rank assigned to each item by the parents, as determined in the same manner.

¹This study was prepared by Miss Camerer under the direction of Dr. Ernest Horn, of the State University of Iowa. The list of questions was originally drawn up by Charles R. Rounds, Superintendent of Schools, Fort Thomas, Kentucky.

²Other methods of ranking were tried, like assigning two units to each double check and one unit to each single check, but these produced no decided alterations in the resulting order of importance.

TABLE 1

ORDER OF IMPORTANCE OF VARIOUS ITEMS OF INFORMATION CONNECTED WITH BANKING,
AS RANKED BY BANK EMPLOYEES AND BY PARENTS

Rank Order Assigned by Bank Employees	Item	Number Bank Employees Checking as			Rank Order Assigned by Parents
		Very Important	Somewhat Important	Not Important	
1	How to write a check.....	28	7	0	3
2	How and why fill out the stub..	23	11	1	2
3	When check should be cashed..	21	14	0	14
4	How to stop payment of a check.	19	16	0	28
5	How to sign your name when indorsing a check.....	19	16	0	6
6	What to do in case a check is lost	18	16	1	25
7	How to indorse a note.....	18	16	1	17
8	How to write a negotiable note.	17	17	1	19
9	How to indorse a check in full..	16	16	3	8
10	How to use a bank book.....	15	18	2	4
11	How to make out a deposit slip.	15	18	2	1
12	How to find interest.....	15	18	2	13
13	Importance and purpose of savings banks	15	17	3	15
14	Importance and purpose of commercial deposit banks.....	15	17	3	20
15	How to use a promissory note...	14	19	2	16
16	Responsibility of maker if note is lost	13	22	0	44
17	Certified checks	13	21	1	29
18	How to open an account.....	13	20	2	5
19	When notes are void.....	12	24	1	36
20	Legal rate of interest.....	12	21	2	18
21	Certificate of deposit	11	23	1	12
22	Purpose and use of collateral notes	11	21	3	34
23	How to indorse a check in blank	11	21	3	9
24	How to write a non-negotiable note	11	19	5	49
25	How to write a commercial sight draft	11	19	5	31
26	Post dated checks	11	17	7	33
27	How to indorse a check, qualified indorsement	11	14	10	21
28	How to write a restrictive indorsement	11	14	10	40
29	How to write a demand note.....	10	22	8	38
30	How to use a commercial sight draft	10	22	3	37
31	When notes may or do draw interest	10	22	3	35
32	How to write a joint note.....	10	20	5	39
33	How to write a collateral note..	10	19	6	45
34	How to write a note payable by installments	10	19	6	41
35	How to write a joint and several note	10	18	7	46
36	Rate of interest by contract....	9	23	3	30
37	How to find date of maturity of notes	9	22	4	26
38	Purpose and value of accommodation note	9	15	11	54
39	Where to pay a note.....	8	26	1	24
40	How to secure a bank draft....	8	25	2	10
41	How to use a bank draft.....	8	24	3	11

TABLE I (Concluded)

Rank Order Assigned by Bank Employees	Item	Number Bank Employees Checking as			Rank Order Assigned by Parents
		Very Important	Somewhat Important	Not Important	
42	Proper place on a check to make an indorsement	8	22	5	7
43	Purpose of ironclad or judgment notes	8	11	16	52
44	How to write a note payable on or before a certain date	7	26	2	32
45	How to use a bill of exchange	7	20	8	43
46	How to write an ironclad or judgment note	7	12	14	53
47	Safety deposit vaults	6	26	8	22
48	How to secure a bill of exchange, inland or foreign	6	20	9	47
49	How to use travelers' checks	5	26	4	28
50	Voucher checks	5	21	9	42
51	Purpose of days of grace	5	16	14	43
52	How to write a produce note	4	16	15	55
53	How to use a letter of credit	3	27	5	51
54	How to secure travelers' checks	2	30	3	27
55	How to secure a letter of credit	2	28	5	50

Additional Topics Suggested By Bankers

1. Why are checks protested?
2. What becomes of checks after they are protested?
3. What is an overdraft?
4. What should the public know about overdrafts?
5. How notes are discounted.
6. Duties of bank officials.

Of the thirty-five returns from the questionnaire, ten answered the first request, which was to state after each item what the citizens of a community ought to know about it. A composite of these ten replies follows, keeping as nearly as possible to the phraseology and including all points made. The number *before* each item represents the order in the questionnaire. The first number after the item indicates its place as shown by the bank employees, which may be taken as a measure of its importance from the banker's point of view. The second number after the item indicates its place in the list as shown by the parents.

1. *How to open an account (18-5)*

If known, apply at receiving teller's window, give name, address, and deposit slip. Be prepared to name some person of whom inquiry may be made as to your standing and responsibility. The teller will issue you a pass book with amount of first deposit, give you a check book and take a specimen of your signature for the bank files.

2. *How to use a bank book (10-4)*

The bank book is used by some banks as a receipt for deposits only. In other banks it is used to record checks as well, one side being used for deposits and the other side for checks. The pass book should be presented with each deposit and should also be balanced at the bank occasionally—if an active business account, once a month, unless your bank issues monthly statements.

3. *How to make out a deposit slip (11-1)*

Write, in places indicated, the depositor's name, the date and amount in currency, silver and checks. List checks separately; make total of all; verify sum, and present with deposit at the teller's window so that he may check.

4. *How to write a check (1-3)*

Fill in with ink, number, date, name of payee and amount, in places indicated. The amount is recorded both in figures and writing, with the figures as near the dollar sign as possible and the writing very near the left end, with first letter a capital, and all blank spaces filled with lines to avoid raising. The written amount governs payment of check if there is any discrepancy. Write signature very legibly on the last line. Checks should not be given for less than one dollar.

5. *How and why fill out the stub (2-2)*

Fill out by recording the number, amount of check, date and name of payee. Subtract amount of check from total of amount brought forward, plus deposits since and transfer balance to next stub. This will give you a complete record of each check issued and show your present balance.

6. *How to indorse a check in blank (23-9)*

Simply write the name on the back of the check across the left end exactly as it is written on the face. If written incorrectly on the face of the check, write correctly below the incorrect indorsement.

7. *How to indorse a check in full (9-8)*

A check is indorsed in full by the payee's making it payable to the order of some bank or individual and then signing his name.

8. *How to indorse a check, qualified indorsement (27-21)*

Qualified indorsements are not looked upon with favor, though they are sometimes used, as: "Pay to the order of John Smith when he has finished a certain piece of work."

9. *How to write a restrictive indorsement (28-40)*

The restrictive indorsement most commonly used is the one which prohibits a further negotiation of the instrument, as: "Pay to John Smith only."

10. *Proper place on a check to make an indorsement (42-7)*

The proper place for indorsement is on the back of the check at the left end, the signature written crosswise.

11. *How to sign your name when indorsing a check (5-6)*

Sign your name exactly as it is written on the face of the check; then sign again with correct name, if that on the face is incorrect.

12. *How to stop payment of check (4-23)*

The proper way to stop payment on a check is to notify the bank on which it is drawn, by letter, giving date of the check, number, amount, name of payee, whether indorsed and why payment is being stopped.

13. *What to do in case check is lost (6-25)*

In event of loss of check it is possible to have payment stopped on the original by notifying the bank on which it is drawn, giving description of the check. After a reasonable time has elapsed, issue a duplicate marked so in red ink.

14. *Post-dated checks (26-33)*

A post-dated check is one that bears some future date. The check, however, does not become valid until its date arrives. If presented for payment in advance of its date, the bank cannot honor it, even though the drawer has a sufficient balance to his credit. Post-dated checks should not be issued.

15. *When a check should be cashed (3-14)*

A check should be cashed as soon as possible after it is received, the same day, if convenient.

16. *Certified checks (17-29)*

Certification is a promise by a bank that it will pay a certain check drawn upon it when presented in the regular course with proper indorsement. A check is charged to maker's account when certified. The check becomes the bank's liability, and it must pay the same on presentation. Certified checks are used only in cases of bids on contracts and similar transactions. Certification is made by the bank only.

17. *Voucher checks (50-42)*

Voucher checks are checks with vouchers attached, the voucher giving a statement of the purpose for which the check is to be used or a receipt.

18. *Certificate of deposit (21-12)*

A certificate of deposit is one issued by the bank stating that a certain amount of money has been deposited, payable to a certain party, either on demand or at a stated time. It is not subject to check and may draw interest.

19. *Safety deposit vaults (47-22)*

Safety deposit vaults are fire-proof and burglar-proof, equipped with steel deposit boxes, each locked with two locks and opened only by operating both. The keys to one lock are in the possession of the customer, while the key to the other is kept by the bank. The box can be opened only by the bank and the customer together. These boxes are rented by the year to customers who may keep valuables or money therein.

20. Importance and purpose of savings banks (13-15)

Savings banks fill a very important place, offering to all classes of people an opportunity to set aside a certain part of their income at short intervals and paying them interest compounded semi-annually. Deposits of savings banks are generally invested in real estate mortgages.

21. Importance and purpose of commercial deposit banks (14-20)

Commercial deposit banks handle deposits incident to the transaction of business. They facilitate exchange of credit, especially payment by check, and finance commercial operations. They accumulate the idle money of a community and lend it to individuals and to business interests needing additional capital temporarily.

22. How to secure travelers' checks (54-27)

Travelers' checks may be secured from banks by simply issuing your check for the amount of checks you desire to purchase, plus a commission of $\frac{1}{2}$ percent. They may be used practically as cash, are safe means of carrying money, but the holder is sometimes required to furnish identification. When travelers' checks are issued, your signature is placed on check and is used as identification when you desire to cash them.

23. How to use travelers' checks (49-28)

They can be cashed at most hotels and railroad offices. Instructions are printed on them.

24. How to secure a letter of credit (55-50)

Letters of credit may be secured by application at any bank with a check or cash to cover value and charges.

25. How to use a letter of credit (53-51)

A letter of credit is used by presenting at some bank or business house, which will honor your checks against the letter of credit and indorse the amount paid on the back of it. A letter of credit may be used in a foreign place in the same manner as a check book where the customer is known.

26. How to secure a bill of exchange, inland or foreign (48-47)

Make a written application at your bank, something akin to application for post-office money-order, accompanied by the cash or its equivalent.

27. How to use a bill of exchange, inland or foreign (45-48)

Follow form used in negotiating checks.

28. How to use a promissory note (15-16)

A negotiable promissory note is a promise made in writing by one person to another, signed by the maker engaging to pay on demand or at a fixed future time, a certain sum of money to order or bearer. When the note is drawn to the maker's own order, it is not complete until indorsed by him. The bank will look after its collection free of charge.

29. How to indorse a note (7-17)

If you are guaranteeing payment at maturity or thereafter, the simple signing of your name will transfer title and at the same time hold you sec-

ondarily liable. If you wish to avoid liability in case of failure of maker to pay, then write the words, "without recourse" and sign your name underneath.

30. *How to write a negotiable note (8-19)*

A negotiable note is one for a definite amount, maturing at a definite time, given for a valuable consideration, and payable to the order of a certain person or institution, with no conditions attached.

31. *How to write a non-negotiable note (24-49)*

Make it payable to payee only, by leaving out "or order" or "or bearer" or incorporating in the contract of the note, the word "non-negotiable."

32. *How to write a demand note (29-38)*

The time element is left out and in its place "On demand" is inserted.

33. *Purpose and value of accommodation note (38-54)*

An accommodation note is one given by one person solely for the accommodation of another, with consideration.

34. *Purpose of iron-clad, or judgment note (43-52)*

An iron-clad, or judgment note puts the cost of collection on the payer in case of suit. It is obsolete.

35. *How to write an iron-clad, or judgment note (46-53)*

Not important because very few states permit the practice.

36. *How to write a joint note (32-39)*

A joint note is signed by two parties and states that "We promise to pay——."

37. *How to write a joint and several note (35-46)*

Write it, "I, we, or either of us, promise——" and sign by more than two parties.

38. *Purpose and use of collateral notes (22-34)*

The purpose of collateral notes is to secure the holder of the note by pledging certain stocks, bonds or other security as collateral for the sum borrowed.

39. *How to write a collateral note (33-45)*

A collateral note is written in the same form as a negotiable promissory note, except that it carries with it an assignment of the security. In event that the maker fails to discharge the note, the holder has the right to sell the pledged security.

40. *How to write a note payable by installments (34-41)*

A note payable by installments is written by incorporating in the contract of the note that it shall be payable in monthly or weekly installments of a definite sum.

41. *How to write a note payable on or before a certain date (44-32)*

Begin the note, "On or before January 1, 1918——."

42. *How to write a produce note (52-55)*

43. *Purpose of days of grace (51-43)*

Three days are sometimes allowed the payer of a note in which to pay after it is due. It has been abolished in most states, and others waive it.

44. *How to find date of maturity (37-26)*

If the time is given in days, count exact days from the date; if in months, it will be due on the same date of the month of maturity as the date of the note, according to bankers' rule. The date is usually found by a maturity table.

45. *Where to pay a note (39-24)*

Most notes provide for their payment at a certain bank or office. If not stated in the note, it is payable at the office or residence of the payee.

46. *Responsibility of maker if note is lost (16-44)*

The maker is responsible if the note can be proved, but he may require a bond indemnifying him against repayment.

47. *When notes are void (19-36)*

Notes are void if given by a minor, or an incompetent, if forged, obtained by fraud or under false pretenses.

48. *When notes may or do draw interest (31-35)*

Notes draw interest when it is so stated in the contract. A promise to pay with interest but without stating the rate, provides for interest at the legal rate.

49. *Legal rate of interest (20-18)*

State statutes govern rate of interest by providing minimal and maximal rates that can be lawfully charged.

50. *Rate of interest by contract (36-30)*

Any rate up to and including 8 percent is legal in Iowa. The maximum prescribed by law in different states varies.

51. *How to write a commercial sight draft (25-31)*

"At sight, or at so many days" sight, pay to the order of, and charge same to the account of (name).

52. *How to use a commercial sight draft (30-37)*

Make it payable to your bank or to yourself, indorse and handle as you would a check or other negotiable instrument.

53. *How to secure a bank draft (40-10)*

A bank draft is secured by making application at your bank and giving them the name of the party to whom you desire to make the draft payable, and the amount in cash or check to cover draft and charges.

54. *How to use a bank draft (41-11)*

May be mailed in an ordinary letter and cashed just as a check.

55. *How to find interest (12-13)*

(1.) Use interest tables. (2.) Other ways: (a) Multiply amount by rate and time. (b) Point off two places for 60 days at 6 percent and work from that. (c) Multiply sum by number of days, point off two places, divide by 60 for 6 percent, by 72 for 5 percent.

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CHAPTER III

THE DETERMINATION AND MEASUREMENT OF THE MINIMAL ESSENTIALS OF ELEMENTARY SCHOOL GEOGRAPHY

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In the few attempts that have been made to select minimal essentials in geography, emphasis has been placed, almost exclusively, on place geography. Minimal place material has been selected (1) through the individual judgment of a teacher or geography specialist, (2) through the collective judgment of a number of teachers or geography specialists, (3) through a comparison of the relative emphasis given to certain materials in textbooks of geography, and (4) through a study of the frequency with which place names occur in newspapers and magazines.

By the individual judgment method there will be as many lists of minimal essentials as there are individuals. By the collective judgment method, a list may be selected that will represent the combined judgments of the group. Since it is largely the work of specialists in geography to determine the content, and of administrators to adopt methods that will insure the mastery of content, the judgment of a group of specialists regarding minimal essentials should be more nearly right than the judgment of a group of teachers.

The individual judgment method was used, presumably, by Mr. Thompson¹ in his exercises in minimal essentials; and by Superintendent Witham² in establishing "A Minimum Standard for Measuring Geography" in the sixth grade, who states that he sought

¹Thompson, T. E., *Minimum Essentials in Geography*.

²Witham, Ernest C., A minimum standard for measuring geography, *American School Board Journal*, 50: Jan., 1915, 13.

“to measure the pupils’ knowledge and geographical thinking” of the United State with a list of fifty-five questions to be answered in forty-five minutes.

The collective judgment method of specialists is illustrated by the work directed by Professor Whitbeck³ in the Cornell University Summer School in 1910. Professor Whitbeck believed that the ‘scrappy’ and unreliable character of the geographic knowledge of college students resulted from the superficial teaching of many facts, without sufficient emphasis on important facts. With the aid of a class of experienced schoolmen, a minimal list of the cities of the world was selected, and submitted to the consideration of a committee of six expert geographers. All cities of the United States approved by at least two of the experts, and all cities of the rest of the world approved by at least three of the experts, were included in the final minimal list. The results were as follows: 25 cities of the United States; 8 of the Western Hemisphere, exclusive of the United States; 16 of Europe; 8 of Asia; 8 of Africa, Australia and the scattered islands. The object of this list was not to restrict the pupil’s knowledge of other cities, but to secure a select group of cities of distinct value in the world of affairs, for which pupils might be held strictly responsible.

The collective judgment method was also followed by a group of teachers of Springfield, Illinois, working under the direction of Professor D. C. Ridgley,⁴ in 1914, with respect to the fourth and fifth-grade work. As a result, the following number of place names was recommended and adopted for these grades in the Springfield Schools: World 30, North America 27, United States 143, South America 35, Asia 39, Africa 19, and Australia 11.

The textbook method applied by Dr. W. C. Bagley⁵ to the content of history could be used similarly with geography, but, in so far as the writers know, it has not been applied sufficiently to justify a report. This method, however, is in effect substantially the same as the combined judgments of experts.

³Whitbeck, R. H., Where shall we lay the emphasis in teaching geography, *Education*, 31: Oct., 1910, 108-16.

⁴Ridgley, D. C., The teaching of place geography, *Journal of Geography*, 11: Sept., 1912, 13-16.

⁵Bagley, W. C., The content of American history, *Bull. No. 16, University of Illinois School of Education*.

The last of the methods employed, that of selecting a minimal list of places on the basis of frequency of mention in current literature, was reported by Dr. Bagley⁶ in the *Fourteenth Yearbook*. The results of this investigation were inconclusive, but indicated that such a method, if taken alone, would be unsatisfactory as the basis for the selection of minimal essentials.

The writers of this article hold that any list of minimal essentials in geography that does not emphasize relational facts as well as facts of place is inadequate. According to the modern conception of geography, relations between life forms and their environments are important. Place geography may be taught incidentally as needed in a proper connection with relational geography, subsequently to be supplemented by special drill work if necessary. In offering a list of minimal essentials, the writers have attempted, therefore, to set up certain standards for the selection of the facts that should be learned, and for the relations that should be recognized and appreciated.

It is conceded that the standards chosen can be justified only to the extent that they will permit the selection of minimal essentials that will test whether or not the aims of geography teaching are being realized. The aims of geography teaching are to impart the more important facts of conventional or practical value; to secure on the part of the pupil ability to interpret properly the geographic factors that enter into problems of timely moment; and to develop an appreciation of the importance of the United States intrinsically, and its relational aspects to the world as a whole.

The realization of these aims requires a general knowledge of (1) the relative location of the large land and water bodies, (2) the location of the more important countries of the world, (3) the location of the more important cities of the world, (4) the physical conditions of the more important countries, (5) the occupations of the people and the conditions of transportation, (6) our commercial relations with these countries, and (7) the fundamental relationships between the physical factors and human activities.

⁶Bagley, W. C., The determination of minimum essentials in elementary geography and history, *Fourteenth Yearbook of this Society*, Part I, 131-147.

In determining a minimal essential list of countries of the world, the following standards were employed: (1) the area of the country in square miles, (2) population, (3) total value of imports, (4) total value of imports from the United States, (5) total value of exports, and (6) total value of exports to the United States. These criteria not only offer objective data of great significance in the study of a particular country, but also afford a means of measuring the relationships of the United States to other countries.

The statistical data for each of the above criteria were secured from the *Statistical Abstract of the United States* (1915) in which reports covering the latest year for which statistics were available, for the fifty-two more important countries of the world, were given. The countries were ranked according to their relative importance with respect to each of the six criteria and have been numbered accordingly in Table I that follows:

The fifty-two countries of Table I were then divided into quintiles under each of the six criteria previously discussed, and values were assigned to rank in the various quintiles as follows: (1) rank in the first quintile in each criterion received a score of 5 points; (2) rank in the second quintile, a score of 4 points; (3) rank in the third quintile, a score of 3 points; (4) rank in the fourth quintile, a score of 2 points; and (5) rank in the last quintile, a score of 1 point. The total score thus received by a country would serve as an index of the relative importance of that country among the countries of the world in area, population, import and export trade; and of its relative importance to the United States in import and export trade.

Table II indicates the total score of each country, by this method. These scores range from 30 points, a perfect score, in the case of the United States to 6 points for Liberia. An examination of the scores clearly indicates the greater importance of certain countries, and suggests the desirability of establishing a line of demarcation between the important and less important countries. This is exactly what the movement for economy of time in education seeks through a scientific determination of essentials. It is recognized that the placement of this line is at first a somewhat arbitrary matter, and that through experimental evidence

TABLE I

FIFTY-TWO COUNTRIES RANKED IN IMPORTANCE IN TERMS OF SIX CRITERIA

	Country	Area	Popu- lation	Total Imports	Imports from U. S.	Total Exports	Exports to U. S.
1	United States	4	4	3	(1)	1	(1)
2	Great Britain	29	8	1	1	3	3
3	Germany	21	5	2	2	2	2
4	France	22	9	5	5	5	7
5	India	7	2	9	22	6	8
6	Austria-Hungary	20	7	8	8	9	10
7	Russia	1	3	7	12	7	27
8	Canada	3	19	11	3	11	1
9	Italy	32	10	10	7	10	10
10	Japan	27	6	15	10	14	5
11	China	2	1	13	15	16	13
12	Brazil	5	11	21	14	17	6
13	Argentina	8	20	16	13	13	11
14	Netherlands	49	24	4	4	4	9
15	Mexico	9	14	30	11	23	4
16	Belgium	50	21	6	6	8	16
17	Australia	6	31	12	9	12	21
18	Spain	24	13	19	16	21	22
19	Sweden	25	27	17	20	18	25
20	Egypt	17	15	26	39	25	19
21	Turkey	12	12	20	34	27	23
22	Switzerland	48	35	14	19	15	14
23	Chile	19	36	28	21	26	12
24	South Africa	14	23	22	23	20	33
25	Philippine Islands	31	17	33	17	31	15
26	Peru	11	26	40	28	32	13
27	Cuba	15	29	39	27	38	17
28	Denmark	47	37	18	18	19	36
29	Norway	28	41	23	26	28	26
30	Algeria	18	23	24	33	29	42
31	New Zealand	33	43	27	24	24	29
32	Persia	13	16	31	51	35	40
33	Portugal	43	25	29	25	33	39
34	Roumania	37	22	25	40	22	44
35	Venezuela	16	39	43	30	42	24
36	Uruguay	35	46	34	36	30	23
37	Bolivia	10	38	42	41	36	43
38	Siam	23	18	37	44	34	46
39	Greece	41	32	36	45	40	35
40	Morocco	26	30	32	43	48	45
41	Serbia	44	34	41	46	41	41
42	Bulgaria	40	33	35	50	39	43
43	Equador	30	44	47	37	44	32
44	Haiti	51	40	44	39	43	50
45	Tunis	36	43	38	43	37	49
46	Honduras	39	50	49	32	50	33
47	Costa Rica	46	51	43	35	47	30
48	Guatemala	38	42	45	33	45	31
49	Panama	45	52	46	31	51	37
50	Salvador	52	47	51	42	46	34
51	Paraguay	34	39	50	47	49	47
52	Liberia	42	45	52	49	52	51

TABLE II
POINTS SCORED BY FIFTY-TWO COUNTRIES IN SIX CRITERIA OF IMPORTANCE

Country	Area	Pop.	Total Imports	Imports from U. S.	Total Exports	Exports to U. S.	*Total
1 United States	5	5	5	(5)	5	(5)	30
2 Great Britain	3	5	5	5	5	5	28
3 Germany	3	5	5	5	5	5	28
4 France	3	5	5	5	5	5	28
5 India	5	5	5	3	5	5	28
6 Austria-Hungary	4	5	5	5	5	4	28
7 Russia	5	5	5	4	5	3	27
8 Canada	5	4	4	5	4	5	27
9 Italy	2	5	5	5	5	5	27
10 Japan	3	5	4	5	4	5	26
11 China	5	5	4	4	4	4	26
12 Brazil	5	4	3	4	4	5	25
13 Argentina	5	4	4	4	4	4	25
14 Netherlands	1	3	5	5	5	5	24
15 Mexico	5	4	3	4	3	5	24
16 Belgium	1	3	5	5	5	4	23
17 Australia	5	2	4	5	4	3	23
18 Spain	3	4	4	4	3	3	21
19 Sweden	3	3	4	4	4	3	21
20 Egypt	4	4	3	2	3	4	20
21 Turkey	4	4	3	2	3	4	20
22 Switzerland	1	2	4	4	4	4	19
23 Chile	4	2	3	3	3	4	19
24 South African Union	4	3	3	3	4	2	19
25 Philippine Islands	2	4	2	4	2	4	18
26 Peru	4	3	2	3	2	4	18
27 Cuba	4	3	1	3	2	4	17
28 Denmark	1	2	4	4	4	2	17
29 Norway	3	2	3	3	3	3	17
30 Algeria	4	3	3	2	3	1	16
31 New Zealand	2	1	3	3	3	3	15
32 Persia	4	4	2	1	2	2	15
33 Portugal	1	3	3	3	2	2	14
34 Roumania	2	3	3	2	3	1	14
35 Venezuela	4	2	1	3	1	3	14
36 Bolivia	5	2	1	2	2	1	13
37 Uruguay	2	1	2	2	3	3	13
38 Siam	3	4	2	1	2	1	13
39 Greece	2	2	2	1	2	2	11
40 Morocco	3	3	2	1	1	1	11
41 Serbia	1	2	2	1	2	2	10
42 Bulgaria	2	2	2	1	2	1	10
43 Ecuador	3	1	1	2	1	2	10
44 Haiti	1	2	1	3	1	1	9
45 Tunis	2	1	2	1	2	1	9
46 Honduras	2	1	1	2	1	1	9
47 Costa Rica	1	1	1	2	1	3	9
48 Guatemala	2	1	1	2	1	2	9
49 Panama	1	1	1	2	1	2	8
50 Salvador	1	1	1	1	1	2	7
51 Paraguay	2	1	1	1	1	1	7
52 Liberia	1	1	1	1	1	1	6

*Note: An arbitrary perfect score of thirty points has been assigned to the United States because it is the home country of the pupils.

or radical changes in statistical data, some readjustment may be desirable. However, the score of 20 points, the lower limit of the second quintile, seems to offer the most satisfactory place for a tentative limiting line for minimal essentials. This places twenty-one countries in the "minimal essential list." These should receive a more comprehensive treatment than would be given to the remaining thirty-one countries.

In the selection of a minimal list of cities, several factors such as import and export trade, advantages of location, importance of hinterland, and advantages of transportation, were tried as standards; but the lack of sufficient data for many cities rendered such work unsatisfactory. A very close correlation, however, was found to obtain between these standards in cases where such data were available and the single standard of population. It was decided, therefore, to use the standard of population as a criterion for determining the list of cities. After considering the list of cities determined by the single standard of population, it was believed that the largest city of each of the 21 'essential' countries of the world (as previously determined) should be included in the list, with the addition of all other cities of more than 200,000 population in the Western Hemisphere, of all other cities of more than 600,000 population in Europe, and of all other cities of more than 800,000 population in the rest of the world. This standard of population was established on the basis of American relations to the different regions of the world.

This gives a list⁷ of 29 cities for the United States; 10 for the Western Hemisphere, exclusive of the United States; 18 for Europe; and 9 for Asia, Africa, Australia, and the scattered islands. All of these are located in the more important countries, and the pupil will have an opportunity to express judgment on them (excepting Havana, Montevideo, and Santiago) in the completion test that follows.

In selecting a minimal list of products, dependence has been placed upon the value of production in the United States, supplemented by the value of products imported into the United States. The aggregate value of a class of products may be large with large

⁷See for complete list of cities the completion test that follows.

quantities in use, and a low price; or with small quantities in use, and a high price. Neither price nor quantity is an exclusive index of the importance of the products to man. Ranking products in order of aggregate values has the advantage of taking both these factors into consideration.

Ranking the products on the basis of the aggregate values of each product for all countries is desirable, but, because of unsatisfactory data, impracticable. Fortunately, from a somewhat different point of view statistics almost as satisfactory can be obtained. Recent world events have brought out in an emphatic manner the commercial dependence of every first-class power upon practically every part of the earth. The United States, consequently, either produces practically all important materials or imports them in important quantities from other producing areas. Hence, a consideration of the products of the United States and the products imported into the United States offers a comprehensive list of the world's industrial products.

Only the more significant of these products should be included in the minimal essential list.⁸ It has been assumed that all plant, animal, and mineral products with a production value in the United States of \$5,000,000 or more, annually, should be considered; and that this list should be supplemented by all products, not otherwise included, imported in quantities valued at \$5,000,000 annually.

Irrespective of values, however, materials of general distribution, such as hay, clay, sand, and stone, or materials, such as mushrooms, for which information concerning distribution is inadequate, have been omitted.

In working out the relational material, it has been assumed that location, area, surface features, soils, climate, distribution of plant and animal forms, and distribution of minerals are the significant physical factors. The pupil's knowledge of geography, however, has not been tested sufficiently unless he has shown his appreciation of the ways these factors have influenced man, and unless he shows his ability to select important factors that enter into a geographic problem. We recognize the difficulties involved in testing relational geography, and the relative simplicity of testing place geog-

⁸For this list of products see Part III of the completion test that follows.

raphy. The mere testing of place knowledge, however, reveals a very limited amount of the modern geographic knowledge demanded of a pupil. As a matter of fact, place geography may be taught solely by means of drills; or it may be taught incidentally in connection with the solution of geographic problems. The place tests, since they do not indicate whether relations were developed, or merely taken for granted, manifestly do not measure the most vital part of geography.

After this body of minimal material has been taught with sufficient and satisfactory emphasis, a measure of the results can be made by the use of the following completion test. It should be noted in this connection that Part III may be adapted to any areal unit, whether political or geographic, but with slight modification. It is hoped, therefore, that the test will prove helpful to those who may wish to test a geographic province or a part of a country, as well as to those who desire to apply it to political units only. It is not intended that any group of pupils needs to react to all of the twenty-one important countries, along the lines indicated in this part of the test. It is suggested, however, that the test be given for at least three of the major countries, and that the results thus obtained be averaged and regarded as an index of the pupil's knowledge in general of other countries.

COMPLETION TEST FOR THE MEASUREMENT OF MINIMAL GEOGRAPHIC
KNOWLEDGE OF ELEMENTARY SCHOOL CHILDREN⁹

Pupil Age Grade School

PART I

On a 9x12 unlettered outline map of the world, indicate the location of the continents and oceans by writing the names in the proper places. Time limit, 3 minutes. Allow $\frac{1}{2}$ point for each continent or ocean correctly located. Possible score, 5.5 points.

PART II

On a 9x12 unlettered outline map of the world, write in the correct place the name of each of the following countries: United

⁹For the values of the several exercises, see the score card that follows. In case of doubt regarding correctness of the pupil's response to an exercise, it is recommended that he be given the benefit of the doubt.

States, Great Britian, Germany, France, India, Italy, Russia, Canada, Austria-Hungary, Japan, China, Brazil, Argentina, Netherlands, Mexico, Belgium, Australia, Spain, Sweden, Egypt, Turkey.

Time limit, 5 minutes. Allow $\frac{1}{2}$ point for each country located correctly. Possible score, 10.5 points.

PART III

Country.....

1. Give the direction of this country from your home city

.....

2. Give in square miles the approximate area of the United States.....Underline the term that more nearly expresses the area of the above-named country¹⁰ in comparison with the United States: Larger Smaller Approximately the same.

3. Give the approximate population of the United States.....Underline the term that more nearly expresses the population of the above country¹⁰ in comparison with the United States: Larger Smaller Approximately the same.

4. Name an important highland of this country.....

5. Underline the statements that more nearly indicate the prevailing conditions of this highland:

Easy to cross	Dense population	No large cities
Extends above tree line	Permanent snowfields	Herding industry important
Large cities	Much mining	Difficult to cross

6. Name an important river basin of this country.....

.....

7. Underline the statements that more nearly indicate the prevailing conditions concerning this lowland.

Dense population	Much mining	Manufacturing important
River important for navigation	Much swamp and overflow land	Sparse population
Irrigation practiced	Agriculture important	Herding important

¹⁰Omit in testing knowledge of the United States.

8. Underline the statement that describes the prevailing temperature of the country: Primarily in hot belt Primarily in cold belt Primarily in intermediate belt.

9. Underline the statement that describes the prevailing rainfall: Heavy rainfall (Above 50 in.) Moderate rainfall (20 to 50 in.) Light rainfall (Less than 20 in.)

10. Underline the name of each plant product that is important in this country:

Corn	Cotton	Peaches	Lemons
Wheat	Tobacco	Peas	Fibres
Oats	Flax	Silk	Rubber
Barley	Rice	Cocoa	Bananas
Rye	Sugar	Coffee	Grapes
Buckwheat	Apples	Tea	Nuts
Potatoes	Beans	Oranges	Wood

11. Write the name of one of the products underlined above Underline its important use or uses:

Food for man	Clothing	Luxury
Fuel	Shelter	Food for animals

12. Underline the name of each animal that is important in this country: cattle hogs sheep horses mules goats poultry

13. Write the name of one of the classes of animals underlined above..... Underline its important use or uses:

Meat	Milk	Clothing	Eggs	Beast of burden
------	------	----------	------	-----------------

14. Underline the name of each mineral product that is important in this country:

Coal	Nickel	Natural gas	Lead
Iron	Copper	Tin	Zinc
Petroleum	Gold	Silver	Aluminum
Phosphates	Sulphur		

15. Write the name of one mineral product underlined above Underline its important uses or use:

Fuel	Alloy	Paints
Machinery	Light	Plumbing supplies
Fertilizer	Jewelry	Chemicals

16. Underline the prevailing manufacturing conditions:

Extensive	Moderate	Slight
-----------	----------	--------

17. Underline the influential factors in the development of manufacturing:

Good water power	Scarcity of coal	Insufficient labor
Much coal	Abundant capital	supply
Abundant labor	Little water power	Scarcity of capital
supply		

18. Underline statements that properly describe the prevailing conditions of transportation:

Rivers important	Railroads well de-	Public roads well
Rivers of little im-	veloped	improved
portance	Railroads undevel-	Public roads in bad
Lakes very important	oped	condition
Lakes of little im-		
portance		

19. Underline each of the cities of this country:

Washington	Boston	Philadelphia	Toronto
London	Buffalo	Pittsburgh	Budapest
Berlin	Chicago	Portland	Glasgow
Paris	Cincinnati	Providence	Hamburg
Petrograd	Cleveland	Rochester	Liverpool
Vienna	Columbus	St. Louis	Manchester
Tokyo	Denver	St. Paul	Moscow
Rio de Janeiro	Detroit	San Francisco	Naples
Buenos Aires	Indianapolis	Seattle	Warsaw
Mexico City	Jersey City	New York	Bombay
Brussels	Kansas City	Bahia	Canton
Sydney	Los Angeles	Havana	Hankow
Madrid	Louisville	Montevideo	Osaka
Stockholm	Milwaukee	Montreal	Tientsin
Cairo	Minneapolis	Santiago	Calcutta
Constantinople	Newark	Sao Paulo	Amsterdam
Baltimore	New Orleans		

20. Write the name of one of the cities underlined in the preceding exercise..... Underline the statements that properly describe this city :

- | | | |
|------------|----------------------|--------------------|
| Seaport | Important railroad | An important manu- |
| River port | center | facturing center |
| Lake port | A political capital | An important com- |
| | A mountain pass city | mmercial center |

Time limit 30 minutes.

SCORE CARD

Pupil..... Age.... Grade..... School.....

Part I			Part II			Part III							
No.	Perfect Score	Points Deducted	No.	Perfect Score	Points Deducted	Country		Country		Country			
						Perfect Score	Points Deducted	Perfect Score	Points Deducted	Perfect Score	Points Deducted		
1	1/2	.....	1	1/2	.....	1	1	.....	1	.....	1	.....
2	1/2	.....	2	1/2	.....	2	4	.....	4	.....	4	.....
3	1/2	.....	3	1/2	.....	3	4	.....	4	.....	4	.....
4	1/2	.....	4	1/2	.....	4	2	.....	2	.....	2	.....
5	1/2	.....	5	1/2	.....	5	4	.....	4	.....	4	.....
6	1/2	.....	6	1/2	.....	6	2	.....	2	.....	2	.....
7	1/2	.....	7	1/2	.....	7	4	.....	4	.....	4	.....
8	1/2	.....	8	1/2	.....	8	4	.....	4	.....	4	.....
9	1/2	.....	9	1/2	.....	9	4	.....	4	.....	4	.....
10	1/2	.....	10	1/2	.....	10	4	.....	4	.....	4	.....
11	1/2	.....	11	1/2	.....	11	5	.....	5	.....	5	.....
Total	.....	.....	12	1/2	.....	12	4	.....	4	.....	4	.....
			13	1/2	.....	13	5	.....	5	.....	5	.....
			14	1/2	.....	14	4	.....	4	.....	4	.....
			15	1/2	.....	15	5	.....	5	.....	5	.....
			16	1/2	.....	16	4	.....	4	.....	4	.....
			17	1/2	.....	17	5	.....	5	.....	5	.....
			18	1/2	.....	18	5	.....	5	.....	5	.....
			19	1/2	.....	19	7	.....	7	.....	7	.....
			20	1/2	.....	20	7	.....	7	.....	7	.....
			21	1/2	Total	Total	Total	Total
			Total								

Note: If more than one country is tested under Part III, add the total points deducted and find the average, which is to be regarded as the total points to be deducted for Part III.

Possible Score	.....	100
Total Points Deducted Pt. I	.....
Total Points Deducted Pt. II	.....
Total Points Deducted Pt. III	.....
TOTAL POINTS DEDUCTED	.....
Pupil's Score	

CHAPTER IV

ANALYSIS OF THE VOCABULARIES OF TEN SECOND-YEAR READERS

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PURPOSE

The general purpose of this study is to determine scientifically the vocabulary of ten Second Readers in common use in the American elementary schools.

The popular notion that one series of readers is superior to another is based largely upon a feeling of like for, or dislike of, one or the other series, and not upon a basis of scientific comparison.

At present readers are selected upon a basis of 'general merit,' but 'general merit' is a loose and undefined term. To some, who are primarily interested in the quality of illustrations, the content is not so important; others are interested in the mechanical make-up; while others view the reading problem from the literary point of view only, overlooking the other qualities.

This study represents an attempt to find a basis for measuring the quality of readers in so far as the vocabulary of these readers is a factor in determining their worth. The study (1) determines the entire vocabulary of each of the ten readers, (2) determines their common vocabulary, (3) compares the vocabularies of the 'method' and 'content' readers, and (4) shows by means of the vocabularies the relations between these two kinds of readers.

MATERIAL

The materials for the investigation are ten second-year readers from widely known series. The selection of readers was made with no idea of using the ten best series or even the ten most extensively used in the state of Iowa. The list was taken, excepting in two or

three instances, from Superintendent Jones' study covering the United States, and represents the highest frequencies in the country as a whole.

The list includes three 'method' readers—namely, the *Rational Method in Reading* by Ward (1899 ed.), the *Aldine Second Reader* (1907 ed.), the *Beacon Second Reader* (1914 ed.), and seven 'content' readers, namely, the *Riverside Second Reader* (1911 ed.), the *Elson Primary School Reader, Book II* (1913 ed.), the *Cyr Reader, Book II* (1901 ed.), the *New Education Reader, Book II* (1900 ed.), the *Baldwin and Bender Reader* (1911 ed.), the *Heath Second Reader* (1903 ed.), and the *Gordon Reader, Second Book* (1910 ed.).

METHOD

The words of each of the ten readers were first counted, page by page, and each word listed, together with the number of times it occurred on the page. From this page list the vocabulary of each book was tabulated in a combination of an alphabetical and group system, together with the frequency of recurrence of each word in the entire book. From these vocabularies a tabulation was then made showing the entire vocabulary of the ten books arranged in the same order as the separate vocabularies, and containing the word-frequencies, as shown later.

The ten readers together comprised 1566 pages, with a total of 143,789 words. Minor errors in counting may have occurred, but could not have greatly influenced the totals.

RESULTS

Below is given the vocabulary that is common to the ten second readers included in this study, together with the frequencies of each word that appeared 14 times or more. Throughout the study, every difference in spelling is counted as a new word.

the	10429	you	1866	they	1199	on	923
and	4631	it	1737	the	1190	so	901
to	3896	of	1616	that	1170	at	890
a	3818	is	1593	his	1073	her	883
I	2888	said	1344	not	1068	me	822
he	2346	little	1430	for	1025	all	804
in	1997	was	1224	will	952	then	802

as	786	has	284	I'll	163	head	113
but	767	saw	273	looked	163	birds	111
are	766	make	269	off	161	fine	111
my	737	know	266	money	160	heard	111
one	696	house	262	morning	160	under	110
do	691	long	261	door	159	does	109
be	684	must	260	cat	154	still	109
had	678	made	257	dog	154	baby	107
with	675	let	254	find	153	fly	107
have	623	ran	251	an	153	hill	107
what	613	think	250	help	151	song	106
him	607	about	237	red	151	any	104
them	606	man	237	two	151	warm	104
see	598	look	236	asked	149	always	103
there	589	take	232	only	149	around	103
go	565	pretty	228	girl	149	called	103
up	561	went	225	say	146	child	103
very	537	here	223	want	146	sleep	103
when	531	too	222	flowers	143	should	102
we	514	where	220	last	143	told	102
no	490	well	217	upon	141	boys	101
out	483	put	215	or	140	ever	101
come	478	give	212	three	140	through	101
this	471	may	211	yes	140	afraid	100
day	461	tell	211	father	139	please	100
can	460	over	210	leaves	139	things	98
did	454	just	209	run	136	ground	97
mother	426	never	209	other	135	sky	97
away	426	back	208	hear	134	while	97
old	426	many	203	gave	132	right	96
were	419	again	201	don't	131	voice	96
your	415	water	201	sing	131	bright	95
how	413	why	200	kind	130	better	94
now	387	us	199	been	128	flew	94
some	384	shall	198	before	128	live	94
from	366	each	193	keep	128	love	94
into	365	happy	186	eyes	126	wish	94
could	356	thought	186	found	126	fast	93
would	354	white	186	began	125	himself	93
boy	343	hen	183	first	122	place	93
down	343	dear	182	lived	122	sweet	93
if	342	its	180	night	122	until	93
by	340	our	180	beautiful	121	which	93
oh	328	eat	179	these	121	bear	92
came	323	soon	179	thou	121	spring	92
who	306	children	178	much	120	glad	90
tree	303	more	168	cried	119	strong	90
big	301	going	167	after	118	hand	89
am	300	every	166	another	118	near	89
like	300	plan	166	brook	118	brother	88
their	299	poor	166	nest	118	says	88
good	294	bird	164	sun	118	work	88
get	293	great	164	took	115	best	87
time	287	wind	164	fire	113	sometimes	86

call	85	soft	68	carry	52	sad	40
horse	85	food	67	indeed	52	kept	40
fish	84	full	67	angry	51	cross	39
cold	83	together	67	clear	51	often	39
nice	83	corn	66	stock	51	threw	39
something	83	lay	66	book	50	anything	38
till	83	catch	65	wings	50	pleased	38
bring	81	field	65	garden	49	heart	38
shoes	80	done	63	stay	49	nor	37
woman	80	round	63	stop	49	shine	37
name	79	such	63	window	49	wide	37
grow	79	thank	63	guess	48	word	37
small	79	new	62	oak	48	earth	36
sat	78	dark	60	picked	48	felt	36
wise	78	bread	59	fat	47	follow	36
yellow	78	large	59	jumped	47	years	36
black	77	rest	59	named	47	rain	35
far	77	asleep	58	ready	46	deep	34
looking	77	barn	58	everything	45	mind	34
open	77	but	58	joy	45	soft	34
snow	77	dress	58	met	45	golden	33
woods	77	eggs	58	own	45	learn	33
got	76	town	58	show	45	stand	33
grass	76	air	57	use	45	gentle	32
high	76	cannot	57	across	44	sent	32
winter	76	goes	57	alone	44	true	32
coming	75	talk	57	bad	44	sell	31
feet	75	green	56	brown	44	winning	30
fell	75	light	56	fun	44	sail	30
gold	75	set	56	hole	44	forget	29
jump	74	stop	56	leaf	44	then	29
gone	73	brought	55	ride	44	neck	28
room	73	hay	55	almost	43	beside	27
seen	71	care	54	lady	43	yourself	27
behind	70	summer	54	eating	42	pup	26
blue	70	to-day	54	set	42	six	25
might	70	try	54	side	42	crept	24
rose	70	walk	54	those	42	mine	24
hard	69	brought	53	among	41	feel	23
wanted	69	face	53	hat	41	hope	22
fall	68	hold	53	need	41	ten	20
nothing	68	watch	53	running	41	middle	18
river	68	basket	52	top	41	lame	14

A large percentage of these words occurs but one, two or three times in any single reader, as is made clear in the tables which follow. This seems to afford too little provision for drill and review.

TABLE II
NUMBER OF WORDS OCCURRING 1, 2 AND 3 TIMES, BY READERS

Number of times occurring	Elson	Ward	B & B	Aldine	New Ed.	Gordon	River-side	Cyr	Heath	Beacon
1	641	826	472	578	650	592	438	637	437	318
2	263	329	302	344	250	259	213	238	263	341
3	187	147	166	161	153	134	128	111	107	138

TABLE III
PERCENTAGE OF WORDS OCCURRING 1, 2 AND 3 TIMES BY READERS.

Number of times occurring	Elson	Ward	B & B	Aldine	New Ed.	Gordon	River-side	Cyr	Heath	Beacon
1	33.56	43.47	30.74	34.12	39.20	42.68	30.08	37.06	34.03	21.66
2	13.77	17.31	19.67	20.31	15.08	18.67	14.62	19.86	20.48	23.23
3	9.97	7.74	10.81	9.50	9.23	9.73	8.78	9.26	8.33	9.40

The three following percentage tables show the number of words in the vocabularies of all of the ten books, the common vocabularies of these books, the number of new words in the content readers as compared with the method readers, the ratio of common words to the new words expressed in percents, and the percentage of words found in each of the books as compared with the vocabulary of the selected basic text.

When children have completed their basic text, the question of supplementary reading material must be raised. The writer has found a wide divergence of opinion upon this subject, but so far has not been able to discover any authoritative conclusions as to what should constitute the basis of selection. Opinions as to the proper number of new words in a supplementary reader vary from those that advocate the greatest number of new words possible for a reader to those at the other extreme, who advocate the smallest number possible. It has also occurred to some to strike a happy medium between these two extreme positions. It seems possible

TABLE IV

A METHOD READER (WARD) COMPARED WITH THE SEVEN CONTENT READERS FOR THE PURPOSE OF SUGGESTING SUPPLEMENTARY MATERIAL

	Ward	Cyr	Heath	Gordon	B & B	River-side	New Ed.	Elson
Total number of different words	1900	1198	1248	1387	1535	1457	1658	1910
Number of words common to all ten readers	419	419	419	419	419	419	419	419
Number of words not found in Ward		518	589	611	657	678	934	972
Number of words found in Ward		680	695	776	878	779	724	928

that children cannot learn to read fluently if continually hampered by new word forms. It seems evident also that a reader with too small a number of new words would not be the most desirable as a supplementary text.

TABLE V

A SECOND METHOD READER (ALDINE) COMPARED WITH THE SEVEN CONTENT READERS FOR THE PURPOSE OF SUGGESTING SUPPLEMENTARY MATERIAL

	Aldine	Cyr	Heath	Gordou	River- side	B & B	New Ed.	Elson
Total number of different words	1694	1198	1248	1387	1457	1535	1685	1910
Number of words common to all ten readers	419	419	419	419	419	419	419	419
Number of words not found in Aldine		521	603	631	646	677	908	996
Number of words found in Aldine		677	681	756	811	858	750	914

TABLE VI

A THIRD METHOD READER (BEACON) COMPARED WITH SEVEN CONTENT READERS FOR THE PURPOSE OF SUGGESTING SUPPLEMENTARY MATERIAL

	Beacon	Cyr	Heath	Gordon	River- side	B & B	New Ed.	Elson
Total number of different words	1468	1198	1284	1378	1457	1535	1658	1910
Number of words common to all	419	419	419	419	419	419	419	419
Number of words not found in Beacon		543	571	692	749	782	986	1066
Number of words found in Beacon		655	713	695	708	753	672	844

CONCLUSIONS

1. A critical analysis of the vocabularies of a series of readers seems to give a measure of their value.

2. Such an analysis will aid in selecting supplementary readers for use in connection with a given basic text.

3. The readers present in the second grade quite different lists of words. Of the thousands of words in the ten readers, only 419 are common to all ten, while when a 'method' reader and a 'content' reader are compared, the number of words common to the two books is still relatively small, ranging only from 655 to 928 words.

4. Hundreds of the words used in each reader occur only once, twice or thrice in that reader, thus failing to develop drill on these words.

CHAPTER V

COMPOSITION STANDARDS IN THE ELEMENTARY SCHOOL, ARRANGED TO SHOW THE MINIMAL PERFORMANCE ESSENTIAL IN GRADES TWO TO EIGHT

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About two years ago the teachers of the Parker Practice School, which is one of the elementary schools connected with the Chicago Normal College, agreed to undertake to select compositions for each of the grades from the second to the eighth which should serve the purpose of standards of attainment for those grades. It was agreed that the type of compositions should be written narrative from experience, this being the easiest, most popular, and most natural type of writing for children in the grades. If the work proved successful, it was hoped that other types might be standardized in like manner.

Each child was permitted to select his own subject. The papers were written in school during a regular school period with no help from the teacher.

From the papers written by each class the teacher in charge chose ten, classified as follows: two regarded as excellent, graded *E*; two good in thought and good in form graded *G. G.*; two, good in thought and poor in form, graded *G. P.*; two, poor in thought and good in form, graded *P. G.*; and two, fair or passing, graded *F*. No marks were placed on the papers, however, by the room teacher.

Committees for choosing the final standards were formed by grouping all of the teachers from three grades to select the standards for the middle grade of the three represented. For example, the standards for the fourth grade were selected by a committee composed of all the teachers of the third, fourth, and fifth grades. The object of this was to secure a certain uniformity of judgment

by planning so that a majority of the same persons should engage in the task of judging the work of two consecutive grades.

When the committees came to consider the collection of papers that were marked excellent, the number of which from each grade varied from six to ten, it was found advisable to make another grouping not asked for in the original plan. This group was designated superior, and graded *S*. It comprised themes that showed something more in the handling of material than the average *E* paper. These superior compositions were included in the scale to show what will be done by exceptional pupils or by ordinary pupils in exceptional circumstances. It is a matter of regret that the committee did not see fit to include compositions representing the lower degrees of performance as well. It was not the intention, however, to produce a composition *scale* in the strict sense, but merely a collection of compositions which should serve the purpose of establishing standards of relative exactness for each of the grades. In actual use it was thought that compositions not so good as the passing compositions of the standards would simply be marked 'poor' without attempt to establish their actual merit.

About thirty papers from each grade were marked by each member of the committee appointed to select the standard of that grade. These compositions with their marks were then turned over to a reviewing committee, composed of Elizabeth Blish, *Chairman*, Mary Bonfield, Lillian G. Baldwin, Sadie Phillips, Emma B. Lowell, and May L. Edwards, who read the papers, considered the marks, and finally selected in conference one typical example to represent each mark. In this way a series of five or six compositions was chosen for each grade of the elementary school, beginning with the second, as will be seen by reference to the specimens which follow. The members of the reviewing committee felt that the fair, or just passing, papers were more satisfactory as standards than any of the others. The progress from grade to grade in the case of these papers seemed gradual. The superior and the excellent papers, however, presented a much wider range of excellence, which seemed to be due to unusual children, or possibly to unusual experiences of some children. It was fairly clear that some of the superior compositions were due to the extraordinary circumstances through which the

child had passed, rather than to any extraordinary ability on his part. So far as the standards have been tested in classes of students considering the subject of teaching English, it appears that there is a fairly gradual progress from Grade II to Grade VI. Above this, however, those who have attempted to evaluate the standards have had difficulty. It is doubtful whether there is any clear progress above the sixth grade. If this should prove to be the case, it would be one additional argument for the reorganization of the English work of the seventh and eighth grades.

It will be noted that the committee of teachers made no use of a composition scale such as that devised by Professors Hillegas and Thorndike, nor even of such mathematical compilations as were used in the case of the Harvard-Newton Scale. This would have been beside the point. What was done by these teachers represents the possibilities in the ordinary elementary school where the work is done by a group of teachers working without the aid of statistical experts. That very great value results from such attempt at standardizing, no one who has had contact with it can doubt. In contrast with the composition standards recently published by the Board of Education of the City of Detroit, these results are doubtless relatively inaccurate, for in that case the persons who graded the compositions had trained themselves by an extensive period of use of the Hillegas Scale. So far as the present writer has tested the abilities of ordinary teachers to grade compositions by means of the scale, his results accord with those of Kelley as announced in his "Teachers' Marks." While the extreme variation of the grades given with the help of the scale is less than those given without it, the median variation is even greater. This signifies that in order to work out standards in the elementary school with the help of the scale, it would be necessary to train a committee as was done in the case of the Detroit investigation.

One of the most interesting points in the work of the Parker teachers is their attempt to select compositions good in form and poor in thought and the reverse. It will be noted that in some cases it was not possible to find examples of these sorts. Such compositions do exist, however, and their presence suggests the futility of attempting to assign grades to school compositions without consid-

ering content and literary form as contrasted with conventional usages in spelling, capitalization, punctuation, and grammar. It is probable that those who grade by means of the Hillegas Scale are led ultimately to ignore all such elements of composition as are not represented in that scale. This, to be sure, may result in a certain superficial uniformity, but it is decidedly objectionable from the standpoint of class work. Of course, it is generally conceded that the use of such a scale should be in supervision and not in teaching.

COMPOSITION STANDARDS BY GRADES

GRADE II

S

I went to Jackson Park yesterday. I picked up a whole lot of little shells. I found a shell that was shut and I opened it and there was nothing in it.

E

Yesterday I played paper dolls with my sister. We had lots of fun. Then we had lunch. After lunch we played paper dolls again. Then my big cousin came from college. We got her to make some dresses for our paper dolls. After she was done we played jacks

G. P.

Yesterday I played with a girl
We went to get my jumping rope
On the way up the steps we found a baby kitten
He was hungry
We gave him some milk
Then we took him back to the place where we found him
Then I went in the house and my supper

G G

Yest I went to church. It was childrens Day. The boys and girls spoke and sang. I went up on the platform and sang a song. The children were happy

P G

(Missing)

F

My father took me to the woods. I picked pretty flowers.

GRADE III

S

The Robins

Last summer I was playing and I saw a nest. I went home and told my mother. Then my mother and I went down to where the robins nest was.

And we saw two robins go to the nest. One day we bought some food for them and the next day it was gone. One day we went to see them and they were gone. Then we waited a couple of days to see if they would come back and they didn't. So we took the nest home.

E

My Experience

When I was two or three years old I went with my mother and father on a fishing trip. When we got there we had to sleep on the ground with blankets. My dady caught a little fish and gave it to me but I was not big enough to hold it so I let it go. When we went home there was a hoot owl and I was afried of it and hid under the covers.

G P

The Wreck

When I was out at my grandmother's she to my sister and I to go for the paper so we went up to the station and then we heard a loud wist but we did not what it ment so we went on after a while to trains bumped together and many people were hurt with broken arms and legs. The Riverside station was broke a the side and we had to go away to to a little store by the river and my grandmother asked us what kept us so long and we told her what happen. The next morning the trains were running. I was surprize to see the trains running

G G

My Garden

A half of Saturday I was making my garden. I took a shovel and dug the dart up. Then I too the rake and raked the dry grass away. Then I got som soda and put it in the garden. Do you want to know what I put in my garden? I have put into my garden, radishes, geraniums, panseys, tulips, lettuce, and beans. I hope they grow. If they do I will bring a bunch of flowers to school.

P G

(Missing)

F

On Easter

On Easter I went to my friends house. We had Easter candy and we had some colored eggs. We had some eggs for supper. Then my sister and I went out to play. We had a good time on Easter.

GRADE IV

S

An Incident of My Life

Once when I was about two years old something happened to me. It was when I lived in East St Louis. We have a great many chickens at the time. My mother was out feeding them and I was on a box by the window watching. All of a sudden the box slipped and my nose landed on a nail.

That is how I got the scar on my nose. It looks something like a horse shoe and I have always had good luck after that.

E

When I Was Operated On

When I was going to the Englewood hospital my father came and took me there. Then a nurse came and took me out of the auto and took me to a little room then I had to wait about three hours for the doctor. The funny part was that I was not sick at all sick when I got to the hospital but they made me sick. The doctor came with four nurses to get me. He had a long bed on wheels and he put me on it. Then he brought me to the operating room. Then they layed me on a long bed. Everybody in the operating room had white on. Then a nurse brought a little can of ether and put me to sleep.

G P

(Missing)

G G

All From a Little Match

One day when Llewelyn and I were up at his house Llewelyn lighted a match we were but babies and he threw it in the wastepaper basket. It was not much of a fire but it could have done a great deal of damage to the flat Llewelyn lived in. Llewelyn screamed as hard as he could and Esther came running in and she screamed to. Then Mrs Abbott came running in and threw some water on the fire. Then my grandmother came and took me home and I had a big spanking.

P G

My Experiences on the Farm

During moving week I went down to Mattoon, Illinois, and stayed all week. On Thursday I went to the country and stayed until Saturday afternoon. I had a very nice time, too. Friday Thelma and I went out to the chicken farm and they have an old turkey gobbler of which I was afraid because he acted so proud that he scared me badly. But I had a very nice time.

F

On the Farm.

When I go to my grandpa's I feed the horses and the chickens. I like to feed the pids to. I liked to go to the hay field with the hayers. It is such fun to sit on the hay stack.

GRADE V

S

Our Phonograph

We have a phonograph in our home, near a window. I am very interested in it. Sometimes I devote as much as one half hour playing and listening to it. All of my friends and also my family enjoy this little phonograph.

One day while I was playing my favorite record, as I was taking it off it broke. I was so sorry, I couldn't be cheered up until I had another of the same song. I went to several stores but I couldn't find the same kind. The week after that my father surprised me with the same song. We have many other records, but none as sweet as this.

One morning when I woke up I found a new record. It was quite early in the morning. This was sweeter than any other record I had ever heard. I woke my mother up and said to her, "Isn't this record large? It is just beautiful." After I had finished playing it, she said "You are getting to like that phonograph too much."

Then she went away, leaving me much excited. I think a phonograph is just wonderful. It is just made out of metal and sounds so human.

E

A Horse Back Ride.

One day I asked my father if I could go horse back riding, and he said, "Yes, if you know how to drive the horse". I said I knew and went to the barn. At first I saw no one to saddle the horse, but afterwards I saw one of the darkies called Archie. I said to him, "Archie!, will you saddle the horse for me", and he said, "Certainly I will." So he saddled the horse for me and put me on the horse. I had not gone far when I came to a place with lots of green grass. I thought the horse was hungry and I let him eat, but when I went to pull him away he would not let me. I pulled so hard that I lost the reins and had to get down although I did not how to get upon the horse again. I got the reins over the horse's head, and pulled him up by the fence. He would not stand still long enough for me to get on his back. After a while I got tired of standing there so I pulled him up again and got him to eating. While he was eating I got on his back and rode on my way. I did not let him eat any more grass.

G P

A Boy Scout Hike

Holigan, Bab, Edgar and I went on a boy scout hike. We were going to summit. When we got there it was twelve o'clock. We were all hungry, so we decided to cook dinner. Bab said, "That he and Edgar would build a fire if we got some wood. After dinner we started out to see what we could find. We were but a little ways when Edgar saw a snake. We let the snake alone and went on. After while I saw a big mud turtle. He was about a foot wide. We took him and threw him in the water. It started to rain after we were out there for about four hours. When it stopped raining we ate supper. After supper we were sitting around our fire. Edgar started to running. We did not know what he was running after. Then we saw a little rabbit running in front of him.

G G

My Walk to Beverly Hills.

Sunday my mother, my brother, my father and myself took a walk to Beverly Hills. My father said, "You and Daniel go walk along the sides and maybe you will find some violets. We walked along the side and found many violets. After we were between Beverly Hills and Longwood my father saw a green house it looked something like a chicken coop. When we got there

we found it a place where a man lived. As we passed through the country we saw fields of violets.

We came to country school house about as big as a school room. Everything was curious to us, but if they came to where we lived they would think the same.

P G

(Missing)

F

In the Country

I went to the country and had a very nice time. It was raining when I got there and it was very muddy but I had my rubber boots along so I put them on and went to our cottage. I got my rain coat and went to the barn. I started to milk. Then I went to my uncle's and stayed over night till Sunday. Then we went back to our farm.

GRADE VI

S

(Missing)

E

An Incident on Horseback

About two years ago this summer I was on a farm in New York State. It was near the village of Jay. The people we were staying with kept a boarding house as well as the farm.

They had six horses, two buggy horses and four truck horses. I rode horseback on the smallest buggy horse. One day when I was horseback riding the dog (which belonged to the lady with whom we were staying) began to snap and bark at the horse. This got him nervous so in order not to be thrown I steered him around in a circle. The dog sat in the middle looking at us every minute but before long he got so dizzy that he could not get up. I thought we could get away before he recovered but I was entirely mistaken for when I pulled on the other rein the horse would not turn. We kept on in a circle until the hired man who happened to be in the yard came and took the dog away. I then stopped the horse.

You may be sure I did not ride around the dogs again.

G P

Learning to Ride a Bicycle

One day a girl friend of mine came over to my house. She brought her bicycle with her. I asked her if she would let me try to ride it, and she said, "Yes." I got on the bicycle and she held it up. It was rather hard for me to reach the pedals, but I managed to do it. I wanted to try to ride alone, but she said I might fall off. Just the same I would try to ride alone. I tried to go alone but I could not. I would have fallen off if she had not been right along side of me. I rode along with her for a while, but I wanted to try to ride alone again because I wanted to show another girl friend of mine that I could ride a bicycle. Just as she let go of the bicycle I fell over onto the curbing and knocked one of my loose teeth out that I was glad to get rid of. I had a nice time but I will never try to ride a bicycle alone again.

G G

A Boat Trip

Last summer I went to Milwaukee on a steanship. We left down town at about nine o'clock A. M. We had a very good time on the boat. At noon time it was fun throwing crusts of bread into the water and watch the birds get it. We got in Milwaukee at two or three o'clock P. M. We hired a taxi and saw some of Milwaukee. In about an hour the ship was ready to sail back. When it was dark it was fun sitting on deck. We pretend when ships came behind us that they were pirate ships and we were trying to escape. We landed at about nine o'clock P. M. When we got home I was so tired I slept till about non the next day.

P G

What I Did Between Friday and Monday

Friday night I went to the, Harvard Photoplay House, to see, "Little Mary Sunshine". It was very good.

Saturday I read and played with some girls. The name of the book I read was, "Rebecca Mary". In the evening I went out with my father and Mother.

Sunday I read some more and went away in the evening. When I first started out Sunday it began raining so I had to wait until it stopped.

Monday I went to school as usual. That afternoon I played out doors with some girls. In the evening I did my studying and then went to bed.

F

Setting the Backkitchen Afire

When I was a little boy I liked to play with fire, so one day I thought I would burn the papers, that were in the basket. It happened that the basket was full, so I went into the kitchen and got some matches. I did not bother to take the papers out into the alley, but set them afire right where they were. After I had them ablazing high. I went upstairs and told my mother that blachey set the papers afire. Blachey was our little cat, but my mother was glad I told her. She called up the fire department. They got to our house about an hour later, and by that time a boy had the fire out with our garden hose.

GRADE VII

S

A Dissapointing Hike

Saturday I had a very funny but dissapointing thing happen to me. There were three girls and three boys altogether and we started out about noon with our lunches for some woods near Morgan Park. When we were about half way there it began to rain but we trudged on thinking that it would stop pretty soon. But oh no! It kept right on raining harder and harder every minute. I felt as if my shoes were half full of water and my sweater was dripping wet. My hat had red poppies around it and red water kept continually dripping off the brim of my hat. My shoes were covered with black mud and my hands were wet and cold. Finally we got into the woods which were not very thick and which didn't shelter us much. One of the boys built a fire, out of some dry wood that he chopped out of the inside of a

log, so that we could get dry and warm and eat our lunch. The fire was very small but it was better than nothing so we took our lunches out and began to eat. We were all a droll looking sight. I couldn't see myself but I imagine I looked even funnier than they did, standing there beside the tiny fire eating very fast to keep my food from getting wet and red water dripping on the ground and down my neck from my hat. Finally after vainly trying to get dry we started home. Later, when I was sitting next to the warm stove with a cup of hot tea inside me I breathed a sigh of relief and thought "Home, Sweet Home."

E

My First Ride on the Street Car Alone

My most interesting experience was my first ride on the street car alone. I was nine years old and I was going to see one of my girl friends who lived on sixty-fifth and Kimbark Avenue. I was going to take my doll with me and I had a great deal of trouble getting it dressed just so. It was at the time when they had open cars in the summer. I could find no place to sit but up in front with the moterman. When the conductor came up to collect my fare he said, "Well, who is this?" I did not answer him at first until he asked me what my name was. Then he saw my doll and said, "Oh! you have a baby with you. Well I guess I will have to charge you extra for it." I was beginning to get frightened at that but to change the subject I told him to let me off at Kimbark Avenue. The moterman turned around and said, "I will take care of her, but you had better go and finish collecting your fares." After the conductor was gone the moterman started to talk to me in spite of the sign above his head which said, "Motermen must not talk to passengers." He asked me where I was going and if my doll was ever sick. Every once in a while he turned around and said, "I think I hear your doll crying."

I was glad when we came to Kimbark Avenue because I did not like to have everybody asking me questions. When the conductor lifted me off the car I found my friend waiting for me. When I told her what had happened in the car she laughed and I could not imagine why.

G P

A Thrilling Experience on Lake Michigan

It was a windy and stormy day in October. My Sister Mother and I were up in Manistee Mich. We had been there all summer and were now anxious to come home. We telephoned the lighthouse to see if the water was rough. We found out that it was very rough and foggy. We were all very anxious to go home and so we telephoned the lighthouse once more. The water was not quite so rough this time and so we thought we would go anyway. We set sail that evening at about 6. o'clock. As soon as we reached the lake the ship rolled and tossed like a cradle. The wind blew like a cyclone wind. We finally decided to go to bed. The captain came along and offered to help us to our state room. My mother was leang on the wall outside of the state room when the ship gave a sudden lurch and the door slammed shut on her thumb. When the captain brought her in she had fainted. A matron came with some ice, but it did not do much good because her thumb was broken. Oh! how sick we were could not be explained. I hope never to have an experience like that again altho it might have been worse. The captain said all the dishes were broken and that the second deck dipped water.

G G

What Disobedience Did

It was in spring vacation and there was a building being put up at the corner of Sixty Seventh and Parnell Avenue. Every evening after the men went home some of my friends and I played tag on the elevator. My mother told me not to play there for I would get hurt. The evening after my mother told me not to play on the building the boys begged me to come and play. After a while I said I would knowing all the time that I was disobeying. I was up on the third floor "which was the roof" running as fast as I could to get to the elevator and slide down the rope. When I got to the elevator I jumped for the rope but missed. I went down, down, down and I didn't think I was ever going to land when I stopped with a jerk. A little while later I was surrounded with boys and was being brought home on my two brother's shoulders. When I got home my mother was so mad that I got a licking besides a gash in my leg from the fall. I think I had a good lesson for disobeying orders.

P G

A Disappointment

The most disappointing experience that I can remember, is when I went to Ravina Park and sat on the pier all afternoon with a line and never caught any fish.

We started for Ravina Park at ten o'clock and got there about twelve o'clock. As soon as we got into the park my sister said, "O let's have something to eat."

I said, "I second the motion". But mother wanted to stay in the park for a little while, so we stayed in the park until half past twelve. When it was half past twelve, brother said, "Ah, the stroke of half past twelve."

We picked up our lunch and the wraps we carried and started for the beach. The beach was about a mile from the park so we had a long walk.

When we got to the beach we built a fire and made some coffee. After dinner mama, Evelyn, and Papa and Myrtle went to the concert.

Brother got the lines ready and put the bait on them. He gave me a line and said, "Sit still now or you'll scare the fish." I was perfectly disgusted to think that brother didn't think that I knew enough to sit still when I was fishing.

I sat and sat, but nothing bit at the bait. Finally I got tired and told brother I was going down to get a cookie. Brother held my line for me until I got back, but then I had to take it again.

It was three o'clock before the folks got back and I hadn't caught a fish.

F

Catching Turtles

Last summer another boy and I went to catch turtles. We rowed to a place where there was some. Pretty soon we saw some on a log. I rowed the boat slowly up to where they were sitting, then I gave a lunge forward and pushed the oars with all my might. At the same time off jumped the turtles into the water. They swam under the weeds, and sea-grass, I grabed the oar and fished three of them out and almost tipped the boat over besides. We got them all right and put them in the boat. Two of them were snapping turtles and one was not. The latter had a shell and all colors. We took them back to

the cottage and played with them for a while, and then we put them in the lake.

GRADE VIII

S

A Daring Leap

While down town, walking up State Street a short time ago with Mother, I saw a man narrowly escape death. We had just reached the north side of a crossing where the traffic was controlled by a policeman, when I happened to look up the street. For a wonder, it was fairly clear of automobiles and other traffic. Suddenly, I was attracted by a red and yellow racer, coming toward me at a fast clip.

When the racer was about a block away, a loud report came from it. Also, a cloud of smoke which completely enveloped the striped automobile. Out of the smoke shot the speeder, coming on at a dangerous rate. The thing came nearer and nearer to the crossing. Would it reach there before the whistle blew? As the policeman was busy, he had not seen the fast approaching speed-demon. Then the whistle blew and directly into the path of the racer, lumbered a big, heavy, auto truck. The car was no only a hundred feet away and the driver, a young man, was fumbling with the steering gear. The glimpse I had of his grim face showed no signs of fear, although it was a chalky white. Quickly, the driver slid from his seat to the running board poised himself for a second and then jumped.

Not a second too soon, for the next instant the car crashed into the big truck. Bang! went the gasoline tank, and when the smoke cleared, the racing automobile was scraps and the truck badly damaged. The man had luckily fallen into a clear space but did not move. Evidently, he was badly hurt. Up came the policeman in charge of the street and carried him to the sidewalk.

A man in a store nearby had telephoned for the ambulance, so in about five minutes, the injured man was on his way to the hospital. Mother and I then went on.

The only way that I can account for the accident is that he had broken both his brakes and steering wheel at the time of the car being surrounded by smoke. Really, I do not care to see such a thing again.

E

Breaking a Door Glass

Young as I was, I was very fond of marbles, especially those brown, hard ones that were six for a cent. I was always using them when I should have them put away. It was one Sunday, when I was told to put them away, that I disobeyed, and took them with me to a friend's house.

It was great sport, throwing my marbles against the stone stairs and catching them as they bounced back to me. But my fun was soon spoiled by a marble which went too high and broke the large, engraved, plate glass door that led from the porch into the house. My mother was summoned and I was told, in fact I knew very well, what would happen when I got home. As I was very small, I threw the marble into a sewer thinking that would help matters but it did not. This combination of pleasure and misfortune cost my father thirteen dollars and a half.

G P

A Night in the Swamp

One day, my chum and I did not have anything to do so we decided to go out on the swamps which were about a mile from my house with our twenty

two's and look for muskrats and other small game. We started about half past twelve or one o'clock in the afternoon. My chum had his Irish setter with him and we anticipated a goodtime. As the afternoon advanced we got farther and farther into the swamp and we had not yet raised any game except one muskrat which we both fired at and both missed. About six o'clock we were ten miles from home and night was coming on fast.

We quickly turned around and started on the run for home. We had gone about a half mile when we suddenly missed my chum's dog. We called and called but he did not come. My chum said, "I think he must have been caught in a muskrat trap. We had better go back and look for him." So we turned around and went back. We searched for over an hour before he was found. It was just as we had thought. The he was with both hind feet in a trap and it must have hurt him because he was whimpering. When he was released he could hardly walk. We again started and had to go very slowly on account of the dog. It was eight o'clock and we were still seven or eight miles from home. We walked on and after what seemed ages we came to the toll gate, which was a lift bridge over a small river. But to our dismay the bridge was up for the night and there was no light in the keepers hut. We yelled and threw stones but it seemed that the toll keeper had gone to town. We looked for a boat but they were all on the other side of the river where all the people lived. At eleven o'clock the man who tended the bridge came home and we got across. We did not have any toll money and as he felt sorry for us he let us across free. We ran like everything and were soon home. It was twelve o'clock when we got home but nobody was home. They were all out looking for us. At two o'clock they came home. They thought we had gone on to the next town until the man at the bridge told them he had seen us going towards home. They were so glad to see us they forgot to scold and we got off free. But we decided or rather our parents decided the next that we would never go into the swamp without a grown up person with us.

G G

A Snake Hunt

Two years ago in the southern part of Illinois, my cousin and I went snake hunting. He had a golf-stick and a knife and I had a small pistol. With this equipment we started to a large pond on my Uncle's farm. Into this pond flowed a small creek, so we followed it for at least an hour and had not seen a snake. I wanted to go back home but he wanted to go on a while longer so I went with him.

We walked and watched for snakes until we saw one which we killed. Then we happened to take notice of our whereabouts and we decided to start home for it was getting dark.

So we started home on the run, but it soon became so dark we could not see the creek any longer, we had to wade in the water to know where we were going. It took us about an hour and a half to get home where we ate a big supper and then we told our story and which made everyone laugh and tease us about not knowing enough to come home when it started to get dark. That experience made us not want another snake hunt.

P G

Locked Out for the Evening

One afternoon as I was playing with a friend of mine in the house, we decided to go outside and play. When I came from school I had my coat on

and the key in my pocket, but as it was warmer now than it had been I put on my sweater.

"Come on," I said to my friend. At this we both ran thoughtlessly out of the door and just as it closed I exclaimed "What will we do? I left the key in my coat pocket. It is mother's key and papa will not get home until half past nine."

"Well you're a great one. But accidents will happen."

We went to the back door to see if any window might be open or any possible way of getting into the house could be found. But alas! All the windows were down.

"Mother is coming on the elevated so I'll go and tell her the sad news," I said.

"Goodbye then I hope everything turns out all right," was my friend's parting reply.

"I do too," I answered.

Then just as I left her it began to rain, and it came faster and faster until it was really storming. At the station I waited and waited and at last my aunt appeared, but not my mother.

"Where is mother?" I questioned.

"She went home early because she had a bad head-ache. Why are you here?"

"O! We're locked out and mother has a head-ache," I exclaimed.

"I knew this would happen sometime when you had the key, but come on over home with me and your mother can lie down," my aunt said.

"That surely is a relief," I said with a sigh of relief.

Of course this wasn't a nice situation but it was better than being in the rain until nine thirty, for we went to our house and found mother on the steps and then went to my aunt's for the evening.

F

A Lesson That I Learned When I Was Small

I had gotten my experience by handling a razor without permission. My father generally puts his razor away every time he uses it, but that day he left it on the window sill. I took it out of the case and examined it. After turning the blade around several times, it cut through the skin of my finger, quite deep. The blood started to circulate very rapidly. I certainly knew enough to leave razors alone after that.

CHAPTER VI

A SUMMARY OF TEN RECENT INVESTIGATIONS IN THE FIELD OF ENGLISH

Prepared under the direction of James Fleming Hosié, Chicago Normal College.

Breed, Frederick S. and Frostic, S. W., Measuring English composition in the sixth grade. *Elementary School Journal*, 17: January, 1917, 307.

Four hundred eighty-one samples of English composition on the same subject were written under relatively similar conditions. Three competent judges graded these compositions independently into ten groups. The samples were then arranged in such manner that the poorest specimens were placed in Group one, the next to the poorest in Group two, and so on to the best group, which was marked ten. The reports of the three judges were then tabulated and a set of seventy samples chosen for further investigation. The scale was constructed by selecting from the seventy samples in a manner similar to that employed by Professors Thorndike and Hillegas.

Courtis, S. A. and Beverley, Clara, *English Composition*. Detroit: Board of Education. Pp. 158.

A volume of compositions illustrating the written work of the children in the Detroit elementary schools. The compositions were evaluated with the help of the Hillegas Scale by a committee specially trained for the purpose. This committee was made up of the supervisor of English in the grades, Miss Clara Beverley, and the supervisor of educational research, Mr. S. A. Courtis, together with Mr. Courtis' assistants. Among the other material in the volume is a scale evaluated in the terms of the Hillegas Scale and also in terms of the teacher's mark for the grade. Set "J" of the Thorndike collection of English compositions for practice is reproduced entire, together with the values in terms of the Hillegas Scale. The supply of the pamphlet is limited. Those interested should correspond with Miss Clara Beverley, Office of the Superintendent of Schools, Detroit, Michigan.

Diebel, Amelia and Sears, Isabel, A study of the common mistakes in pupils' written English. *Elementary School Journal*, 18: November, 1917, 172.

This study should be compared with a similar one made upon the oral English of exactly the same number of pupils in the same grades of the same schools in Cincinnati, and reported in the *Elementary School Journal* for September, 1916. The authors state that "the main question in the teaching of written English, as revealed in the papers examined, is not so much one of the use of language as of punctuation, composition form, and carelessness—these three items supply 66 percent of all the mistakes made."

Haggerty, M. E., Measurement and diagnosis as aids to supervision. *School and Society*, 6: September 8, 1917, 271.

This study represents an attempt to follow the progress of certain elementary pupils by means of the Hillegas and Harvard-Newton composition

scales. Approximately 300 children, eight principals, and as many teachers were concerned in the investigation. No definite conclusions are drawn, except that more accurate scientific methods are needed in supervision than we have been employing.

Johnson, Roy Ivan, The persistency of error in English composition. *School Review*, 25: October, 1917, 553.

This reports an investigation carried on in the Junior College of Kansas City. It is listed in the present connection because of the fact that it is an aftermath of the work carried on by Professor Charters and reported at length in the *Sixteenth Yearbook, Part I*. Mr. Johnson draws the conclusions that it is necessary to take into account both persistency and prevalence in determining the order of needed increase of emphasis in the teaching of correctness. This, he thinks, may be done by making a ranking of the sums of the ranks of each class of error in persistency and prevalence. He believes that there is very much greater need than is realized of drill in the mechanics of writing to bring about habitual accuracy. The decrease in ungrammatical sentence structure, mistakes in the case of pronouns, and misspelling is highly gratifying. There is also marked increase in ability shown by the college freshmen in the handling of "the more difficult forms of discourse—description and exposition." This increase of ability may be dependent somewhat upon the natural increase in maturity of thought power.

Mahoney, John J., *Standards in English—A Course of Study in Oral and Written English*. School Efficiency Monographs. Yonkers-on-Hudson: World Book Co., 1917. Pp. 198. \$.90.

This monograph is of the same character as Sheridan's *Speaking and Writing English*. Indeed, the two men worked together for three years in the development of a set of standards and then published their material separately. Of course the illustrative compositions, as well as the text, are widely different in detail. The two together constitute the most considerable contribution yet made to the problem of definite organization of oral and written composition work in the elementary school. Specific standards of attainment are set up for each grade and very helpful suggestions are made for reaching these attainments. No objective measurement, however, was used in determining the values of the illustrative compositions. It will probably appear, when they are tested, that there is considerable unevenness in the steps from grade to grade. Both volumes should be in the hands of all supervisors of English and, if possible, in the hands of all teachers of the subject as well.

Randolph, Edgar D., Conventional aversions versus fundamental errors in spoken English, *Pedagogical Seminary*, 24: September, 1917, 218.

This investigation, carried on in the Speyer School of Teachers College, Columbia University, was previously reported by Professor Charters in the *Sixteenth Yearbook, Part I*. The article is listed here for the convenience of those who wish to examine the material at length. It is especially interesting because of the number of examples quoted with comments. What is needed is to collect a large body of actual work of children in order that sound conclusions may be drawn.

Sheridan, Bernard M., *Speaking and Writing English*. Chicago: Benjamin H. Sanborn & Co. 1917. Pp. 162.

"A course of study for the eight grades of the elementary school, with practical suggestions for teaching composition and a full set of composition

standards." This is a revision of the pamphlet with the same title which was published by the Board of Education of Lawrence, Massachusetts, in October, 1915. "Several new chapters have been added to Part I in the present edition. These, for the most part, are taken from the author's *Suggestions for the Improvement of Written Composition*, published privately in January, 1917. Careful revision of other parts of the work has been made wherever the results of a thorough trial of the plan in Lawrence have seemed to justify it. . . . The number of illustrative compositions has been considerably increased." (See Mahoney.)

Thorndike, Edward L., Tests of esthetic appreciation, *Journal of Educational Psychology*, 10: November, 1916, 509.

This article includes judgments of geometrical forms and judgments of verse. The essential feature in the latter consists in the appreciation of the quality of a line of poetry written to complete a couplet, the first line being given. In each case a line of poetry is completed in six different ways and the judges are asked to decide which is the best. The judgments are arranged so as to show the presumably correct order for each set of lines of poetry and the quality of some extra lines.

Trabue, M. R., Supplementing the Hillegas Scale, *Teachers College Record*, 18: January, 1917, 51.

This scale is made up in part of compositions written in the course of a survey of the schools of Nassau County, Long Island, by the Department of Educational Administration of Teachers College in 1916. The upper end of the scale, however, is taken from the Hillegas Scale. The method of derivation is essentially that worked out by Professor Thorndike and Professor Hillegas, with variations which cannot be described in a brief review. Undoubtedly the scale represents a step forward in the refinement of the tool. Perhaps its most striking feature is a composition graded approximately at zero which was actually written by a school boy.

CHAPTER VII

THE CONTENT OF THE COURSE OF STUDY IN CIVICS

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AIM

In the following pages the writer will endeavor to set forth in a summary way the aim and method of an attempt to discover what should be the content of the course of study in civics, and the main results obtained.

The investigation was undertaken with the conviction that the function of civic instruction is to prepare the pupil for citizenship in a democracy; that such instruction implies preparation for the intelligent exercise of the elective franchise to the purpose that the voter will not be "satisfied with merely going through the motions of government" but that "when he goes to the polls on election day, he will feel the thrill of executing an actual judgment;"¹ that this result is to be obtained in part by the cultivation of civic judgment² through the exercise of the mind upon concrete problems that confront the American electorate. The aim, therefore, of this investigation is to determine what are the most significant and most persistent problems of the American people which seek solution through the machinery of government.

DATA

The specialist in any line of work is most conversant with problems peculiar to his own field of endeavor. For this reason, in seeking to ascertain what problems are of most value for educational purposes, the writer has consulted the specialist in politics, viz., the professional politician.

¹Woodrow Wilson—*The New Freedom*, p. 256

²Arthur Dunn.—*Community and the Citizen*, p. xii.

In political platforms, state and national, have been preserved for us during a period of three quarters of a century, the carefully formulated opinions of these politicians (and shall I say statesmen?) as to what our problems are.

Walter E. Weyl says: "A platform does not show what the politician wants; but does show what that astute person believes that the people want. The superlative value of the platform as evidence is due to the fact that it is always addressed to a potential majority."

DIVISIONS OF THE STUDY

The writer has divided this study into the following parts: (1) an analysis of the national platforms of all the political parties since the first National Convention in the year 1832; (2) an analysis of the state platforms in non-presidential years from 1889 to the present time so far as they deal with national issues; (3) an analysis of all state platforms of the major parties in one year (1910); (4) an analysis of the platforms of the major parties in certain selected states, viz., California, Indiana and New York, since 1850; (5) an analysis of all platforms of the parties in Iowa since 1889, and (6) an analysis of the platforms of one Southern State.

The States of California, Indiana, and New York, were selected because they are or have been in national elections 'pivotal' states, in which, therefore, because the balance of power was uncertain, political interest was acute.

Iowa represents a conservative republican state which has had but one Democratic governor (Governor Boies) and has but once gone Democratic on the presidential ticket (1912). A state from the 'solid South' would, of course, represent the conservative Democratic tendencies.

METHOD OF ANALYSIS

The units of measurement used were as follows: (1) The linear inch. This unit is entirely impartial and is justified upon the assumption that, given a sufficiently long period of time, the topics most discussed are most important. (2) Frequency of mention,

i. e., the number of platforms in which a given topic occurs. (3) Single platform proposal, *i. e.*, the number of distinct proposals falling under each topic. These units will be illustrated by sample tables.

Classification of Topics. It is evident that for purposes of comparison and evaluation the number of major topics in our classification must be reasonably limited. It is equally clear that political proposals do fall into certain general classes; *e. g.*, tariff, income tax, inheritance tax, poll tax, all come under 'taxation,' while taxation, national budget, national debt, etc., fall equally well under 'public finance.'

By trial, it was found that all political problems could be classified in the following twenty-six groups:

- | | |
|-----------------------------|------------------------------------|
| 1. Commerce, Foreign | 14. Monetary System |
| 2. Corporations, Interstate | 15. Moral Reform |
| 3. Constitution | 16. Natural Resources |
| 4. Defence, National | 17. Office, Public |
| 5. Education | 18. Parties, Political |
| 6. Finance, Public | 19. Pensions |
| 7. Foreign Relations | 20. Personal Rights |
| 8. Health | 21. Postal Service |
| 9. Immigration | 22. State Rights |
| 10. Industry | 23. Suffrage |
| 11. Justice | 24. Territories (and Dependencies) |
| 12. Labor | 25. Works, Public |
| 13. Legislation | 26. Miscellaneous |

The item 'Miscellaneous' includes only unimportant statements, such as preambles, conclusions, instructions to delegates, endorsements, principles, etc.

In order that the further subdivisions of our groups may be better understood the following samples of the detailed classification of a few of the most important topics are inserted:

- | | |
|---------------------|------------------------------------|
| 6. Finance, Public | (b) Income |
| A. Revenue Receipts | Individual |
| a. Taxation | Corporate |
| (1) Indirect | b. Credit |
| (a) Tariff | Bond Issues |
| (b) Excises | c. Proceeds of sale of Public |
| (c) Inheritance Tax | Land |
| (d) Emergency Taxes | d. Proceeds of Government Business |
| (2) Direct | B. Management |
| (a) Property | a. National Bank |
| Real | b. Treasury Department |
| Personal | |

- C. Appropriations
 - a. Budget
 - b. Economy
- D. Debt, Public
 - a. Repudiation
 - b. Method of Payment
- 2. Corporations, Interstate
 - A. Transportation
 - a. Steamship
 - b. Railroads
 - B. Communication
 - a. Telegraph
 - b. Telephone
 - C. Industrial (Trusts)
- 17. Office, Public
 - A. Elective
 - a. Registration
 - b. Ballot
 - c. Corrupt Practices
 - (1) Bribery
 - (2) Fraud
 - B. Appointive (Patronage)
 - C. Competitive (Civil Service Reform, Merit System)
 - D. Qualifications
 - E. Tenure
 - F. Emoluments
 - G. Efficiency
- 15. Moral Reform
 - A. Slavery—Negro
 - B. Liquor Traffic
 - C. Marital Relations
 - a. Marriage
 - b. Divorce
 - c. Polygamy
 - d. Social Evil
 - e. White Slave Traffic
 - D. Penal Reform
 - a. Prisons
 - b. Capital Punishment
 - E. Charity
 - F. Sabbath
 - G. Gambling

The application of this method of classification to national platforms is shown in Table I, which reads (taking corporations as a sample) as follows: 'Corporations' ranked third in the total number of linear inches—370—during the year 1900. Some mention was made of this topic in six of the seven platforms. Of the total amount, the Democratic party devoted 142 linear inches (102+22+18) of a total of 861: the Republican party 30 linear inches of a total of 895; the Prohibition, none: the People's party, 81 linear inches of a total of 546; the Socialist Labor, 24 linear inches of a total of 176; the Middle of the Road party, 26 linear inches of a total of 146; and the Silver Republican party, 67 linear inches of a total of 621. All other topics may be read in the same manner.

Table II illustrates the same method of classification applied to state platforms and is interpreted in the same way.

Table III illustrates the application of the 'single platform proposal' as a unit of measurement. The table shows that there were twenty-two Democratic, and nineteen Republican proposals, or a total of forty-one proposals, with reference to corporations generally; of this number, there were four Democratic and two Republican proposals to abolish trusts, a total of six; of this number two

Democratic platforms favored "effective anti-trust laws," one commended the State's anti-trust law, and one urged the "abolition of the Smelter Trust," etc. The grand total shows that there were 561 platform proposals made with referenee to corporations.

TABLE I

LINEAR INCHES GIVEN TO VARIOUS ITEMS IN THE NATIONAL PLATFORMS—1900

Topics:	Dem	Rep	Proh	Peopl	S-Lab	M-R	S-R	Total	Freq	Rank
Commerce		42						121	2	9
Shipping Subsidy Bill	17									
Merchant Marine		28								
Reciprocity		10								
Growth of Export Trade		24								
Corporations								370	6	3
Trusts	102	30		35		15	41			
Republican Insincerity in Trust Legislation	22									
Corporate Interference in Government	18									
Government Ownership				46	24	11	26			
Defence		48						143	3	7
Militarism	32			31						
National Guard	32									
Education						7		7	1	17
Finance								137	5	8
Dingley Tariff Law	11									
Republican Extravagance	9									
War Taxes	9	29					8			
Protection Policy—Fruits		45								
Income Tax				7		8	11			
Foreign Relations								264	4	4
Monroe Doctrine	48	5					23			
Hay-Pauncefote Treaty	8									
Alliance With England	33									
Sympathy With Boers	26			17			34			
Protection of Citizens		8								
Samoa Islands		25								
Hague Conference		5								
South African War		32								
Immigration		8						49	4	14
Chinese Exclusion Law	8									
Mongolian and Malayan				24						
Asiatic							9			
Labor								168	4	6
Department of Labor	23									
Injunction—Black List—				14						
Arbitration	9									
Industrial Education		3								
Child Labor		3								
Convict Labor		3								
Labor Insurance		2								
Mining Trouble in Idaho				32						
Evils of Industrial System					79					
Legislation								45	4	15
Direct	3						8			
Initiative and Referendum				19		20				
Monetary System								479	5	2
Free Silver	28	39		36		10	60			
Currency Bill	53					23	77			
Monetary Legislation		41								
Gold Standard Act				27						
Refunding in Gold Bonds				8						
Payment of Bonds in Gold				20						

TABLE I (Concluded)

Topics:	Dem	Rep.	Proh	Peopl	S-Lab	M-R	S-R	Total	Freq	Rank
Bank Circulation				6						
Authorized Bond Issue				20						
Greenbacks				31						
Moral Reform								261	1	5
Liquor			91							
Foreign Liquor Policy			170							
Natural Resources								86	3	12
Land Monopoly—Homesteads				27						
Land Monopoly—Alien Ownership—Reclamation						21	38			
Office								73	5	13
Popular Election of Senators	7			7			11			
Civil Service		25					16			
Direct Vote—Pres., V. Pres., Senators						7				
Pensions	19	28		19			23	89	4	11
Postal Service								6	1	18
Rural Free Delivery		6								
Suffrage								43	2	16
Negro		19								
Disfranchisement				24						
Territories								504	4	1
Imperialism	57						63			
Philippines	85			39			25			
Taxation of Porto Rico	42			28			15			
Pledge to Cuba	31	8					5			
Statehood, N. Mex., Ariz., Okla.	12	7					7			
Home Rule for Territories	8			7						
Annexation of Hawaii		4								
Foreign Possessions		61								
Works								106	3	10
Nicaraguan Canal	17	7					7			
Reclamation of Arid Lands	9	18					34			
Public Roads		14					34			
Miscellaneous								1044		
Preamble	30	53	27	22		24	76			
Party Record		146								
Democratic Menace		41								
Appreciation of Women		18								
Conclusion	28	10	23				9			
Party Justification			165							
Arraignment of Administration			153							
Appeal to Christians			121							
Principles	25				48					
Appeal to Labor					25					
Totals	861	895	750	546	176	146	621	3995		

The abbreviations used above for parties are as follows: Democratic (Dem); Republican (Rep); Prohibition (Proh); People's (Peopl); Socialist Labor (S-Lab); Middle-of-the-Road (M-R); Silver Republican (S-R).

TABLE II (Continued)

Topics:	Dem	Rep	Prog	Proh	Soc	Total	Freq	Rank
Use Only			7					
Arbitration				6				
Safety and Sanitation					10			
State Insurance					4			
State Employment					8			
Eight-Hour Day					10			
Labor Disputes; Use of Force and Injunctions					4			
Right of Strike, Boycott, etc.					12			
Equal Pay for Sexes					5			
Union Label on Public Documents					3			
Legislation						42	4	10
Initiative and Referendum	14	18		4	4			
Proportional Representation					2			
Monetary System						94	4	5
Democratic Financial Legislation—Evils		6						
Rural Credits		30	10					
Farm Land Banks		21						
Banking and Currency Laws	9							
State Banking Laws, Revision		10						
Flexible, Sound Currency				8				
Moral Reform						121	5	4
Prison Farms		29						
Present Liquor Laws—Endorsement		16						
Reformatories	17							
Prohibitory Amendment			18	5				
Prohibition				10				
Repeal of Malt Law				4				
Marriage, Divorce, Polygamy, White Slave Traffic				7				
Housing					8			
Capital Punishment					2			
Abolition of War					10			
Natural Resources						5	1	16
Conservation of Iowa Lakes		5						
Office						123	5	8
Elections								
Southern Election Laws		12						
Short Ballot		15						
Judicial Primary Law		12						
Absentee Voting	20	15						
Revision of Primary Law			11	8				
Recall				2	8			
Popular Election of Senators				11				
Civil Service Employees, Right to Par- ticipate in Politics					7			
Spoils System		8						
Parties						23	1	12
Representation in Convention Propor- tional to Vote in State		15						
Basis of Representation—Present		8						
Personal Rights						4	1	17
Free Speech, Free Press, Assembly					4			
Suffrage						26	4	11
Woman		14	5	5	2			
Works						58	4	8
Road Laws, Waste, Inefficiency	12							
Panama Canal Completion			9					
Iowa Road Law		32		5				
Home Rule for Cities					2	2	1	18
Miscellaneous						527		
Preamble				14	14			
Conclusion		15		14				
Address on Socialism					295			
Democratic Incompetency		10						
Endorsement of Congressional Delegation		22						
Endorsement of Governor		11						

TABLE II (Concluded)

Topics:	Dem	Rep	Prog	Proh	Soc	Total	Freq	Rank
Denunciation of Republican Senator	28							
Need of Representatives in Sympathy with People and Administration	28							
Endorsement of Administration	43							
Revitalization of Principles of Decla- ration	7							
Greetings to Party Leaders	16							
Endorsement of Progressive Platform and Leaders			10					
Totals	460	562	114	117	443	1696		

TABLE III

PROPOSALS IN STATE PLATFORMS ABOUT STATE ISSUES IN 1910

Classification of Proposals	Democratic Party	Republican Party	Total
I. Corporations, General	22	19	41
1. Abolition of Trusts	4	2	6
(a) Effective Anti-Trust Laws	2-0		
(b) Strict Enforcement of Anti-Trust Laws	0-1		
(c) Law Supplementary to Sherman Law	0-1		
(d) State Anti-Trust Laws	1-0		
(e) Abolition of Smelter Trust	1-0		
2. Regulation and Control of Corporations	2	2	4
(a) Federal Regulation of Inter-State Corporations	0-1		
(b) Federal Regulation should be Supple- mentary to and not Prohibitory of State	1-0		
(c) Control and Regulation	1-1		
3. Punishment for Corporate Offences	4	3	7
(a) Individual Punishment	3-3		
(b) Imprisonment of Corporate Officers for Political Contributions	1-0		
4. Specific Remedies for Specific Abuses	8	3	11
(a) Provision compelling Corporations to Exhaust State Courts Before Appealing to Federal Courts	0-1		
(b) Prohibition on Political Contributions	1-1		
(c) Publicity for all Affairs of Corpo- rations	1-0		
(d) Prohibition on Fictitious Stocks and Bonds	1-0		
(e) Party Pledge to Receive no Contribu- tions	1-0		
(f) Condemn Fire Insurance Companies as Trusts	1-0		
(g) Condemn Corporate Domination of State	1-0		
(h) Regulation of Smelting Charges	1-0		
5. Taxation of Corporations	1	4	5
(a) Taxation of Corporate Shares Direct to the Corporation	0-1		
(b) Taxes on Gross Revenue	0-1		
(c) Taxes on Intangible Assets	0-1		
(d) Collection of Just Taxes from Corpo- rations	1-1		
6. Justice for Corporations	3	4	7
(a) Same Protection to Corporate as to Individual Property	2-0		
(b) Fair Treatment from and to Corpo- rations	1-0		
(c) Robertson Insurance Law	0-1		
(d) Restriction on Capitalization	0-1		
(e) Excessive Incorporation Fees	0-1		
7. Cooperative Methods to Reduce High Cost of Living	0	1	1

TABLE III (Concluded)

Classification of Proposals		Democratic Party	Republican Party	Total
II.	Public Utilities	32	20	52
1.	Regulation	16	11	27
2.	Specific Proposals of Remedies	9	6	15
	(a) Extension of State Railroad Commission's Jurisdiction to Public Utilities 2-3			
	(b) Popular Vote on Franchise Grants . . . 3-1			
	(c) Publicity 1-0			
	(d) Prohibition of Free Service to Public Officials by Gas and Electric Company 0-1			
	(e) Extension of Power of Railroad and Water Supply Commission 1-0			
	(f) Arbitration of Disputes Involving Public Service Corporations 1-0			
	(g) Provision Giving Public Utility Commission Power to Fix Rates 0-1			
	(h) Stocks, Bonds, Rates 1-0			
3.	Taxation	7	8	10
	(a) Ad Valorem System 0-1			
	(b) Physical Valuation 6-1			
	(c) Excessive Franchise Taxes 0-1			
	(d) Assessment and Taxation on Same Basis as Other Property 1-0			
III.	Railroads	37	27	64
1.	Railroad Commission(ers)	10	8	18
	(a) Replacement by Public Service Commission 1-0			
	(b) Election of R. R. Commissioners in place of State Board of Assessors 0-1			
	(c) Increase of Power 2-2			
	(d) Extension of Jurisdiction 2-3			
	(e) Commendation of Service 1-2			
	(f) Condemnation of Service 1-0			
	(g) Efforts to Weaken Condemned 1-0			
	(h) Honest and Efficient Discharge of Duties 1-0			
	(i) Popular Election of Commissioners Opposed 1-0			
2.	Regulation	0	4	4
3.	Rates	11	4	15
	(a) Freight 1-0			
	(b) Passenger Fare 1-1			
	(c) Freight and Passenger 7-3			
	(d) Freight and Passenger Rate Discrimination 2-0			
4.	Political Influence	6	6	12
	(a) Intended Control of Legislative Action 1-0			
	(b) Domination of Party Councils 0-1			
	(c) Interference with Elections 0-1			
	(d) Domination of State by Southern Pacific Railroad 1-0			
	(e) Political Bureau of Southern Pacific 1-0			
	(f) Anti-pass Laws 2-3			
	(g) Permission of Passes to Specified Persons 1-1			
	(h) Special Favors to Public Officials by Transportation Companies 0-1			
5.	Physical Valuation	6	2	8
6.	Encouragement of Competing Lines	1	0	1
7.	Modernization of State Railway Laws	0	1	1
8.	Increased Railroad Facilities	1	0	1
9.	Abolition of Grade Crossings	1	1	2
10.	Approval of Charter Grant	0	1	1
11.	Maximum of Fourteen Hours for Trainmen	1	0	1
	Grand Total:			156

TABLE IV
NATIONAL PARTY PLATFORMS—SUMMARY OF RANKS BY YEARS

Topics:	44	48	52	56	60	64	68	72	76	80	84	88	92	96	00	04	08	12	16		
Commerce					5		15	14	4	14	11	9	9	9	15	10	6				
Constitution	9	9	4	11	10	2	10	3	5								23	20	18		
Corporations				3	9		11	14	8	5	4	6	3	3	3	2	1	7			
Defence		3	9			1	2	4	16	19	16	19	20	7	10	12	17	2			
Education						17	6	10	16	13	9	19	17	18	24	21	20				
Finance	2	2	2	4	6	6	1	2	1	4	2	1	1	2	8	2	3	2	3		
Foreign Relations			3	3	4	4	4	6	8		3	3	4	4	4	4	6	13	1		
Health																			17	14	15
Immigration	5	6	8	7	11	7	7	12	10	5	11	8	10	18	14	16	20	18	18		
Industry								14	12										13	16	5
Justice										11	15	16	18	16	8	17					
Labor							8	5	16	6	9	6	5	7	6	1	1	3	4		
Legislation	4	4	10	9				9	14	15	18	15	15	14	11	23	17				
Monetary System	12						9	7	7	6	12	3	1	2	12	5	6	14			
Moral Reform	1	1	1	1	1	3		9	3	1	11	10	8	5	5	6	19	22	10		
Naturalization													20								
Natural Resources	8	5	11		7		6	8	11	12	8	2	7	8	12		8	4	12		
Office	11	10	12	8		5	3	1	2	3	7	5	2	8	13	7	4	9	9		
Parties			2					10	4	2			16			11	9	5			
Pensions							5	14	13	15	13	11	13	10	11	15	22	24	19		
Personal Rights	6	8	5	10		8		13	12	13			13	12		15	17				
Postal System			11	13				16				18	17		18	17	21	19	16		
State Rights	3		6	5	2					14			12			18	11				
Suffrage				13				18	15	9	10	7	12	14	16	13	14	25	13		
Territories	7					8						17	9	14	11	1	5	7	12	8	
Works	10	7	7	6	9						17	18	17	15	17	10	8	10	7	11	

TABLE V
FREQUENCY OF RANKS

Topics:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	20+
Commerce				1	1	1			3	1	1			2	2						
Constitution		1	1	1	1					2	1							1		1	1
Corporations	1	1	4		1	1	1	1	1	1			1							1	1
Defence	1	2	1	1			1		1	1		1				2			2	1	
Education					1				1	1			1			1	2	1	1	1	2
Finance	4	8	2	2		2		1													
Foreign Relations	1		4	7		2		1					1								
Health														1	1		1				
Immigration					2	1	3	2		2	2	1		1		1		3		1	
Industry					1							1	1	1		1					
Justice								1			1				1	2	1	1			
Labor	2		1	1	2	3	1	1		1						1					
Legislation				2					2	1	1		2	2	3		1	1			
Monetary System	1	1	1		1	2	3		1			3		1							
Moral Reform	7		2		1	1		1	1	2										1	1
Naturalization												2									1
Natural Resources		1			1	2	2	4		2	3										
Office	1	2	2	1	2		2	2	2	1	1	1	1								
Parties		2		1	1				1	1	1					1					
Pensions					1				1	2		3	1	2						1	2
Personal Rights					1	1		2		1	2	3		1		1		1			
Postal System										1		1				2	2	2	1		1
State Rights		1	1		1	1				1	1		1						1		
Suffrage							1		1	1		1	3	2	1	1					1
Territories	1				1		2	2	1		1	1					1				
Works						1	3	1	1	3	1				1	3	1				

TABLE VI
TABLE OF COMPARATIVE RANKINGS

Ranks	All Parties	Dem. Party	Republican Party	Dem. & Rep.	Using Only Highest Five
I	Finance	Finance	Finance	Finance	Finance
II	Office	Foreign Relat.	Foreign Relat.	For. Rel.	Mor. Ref.
III	Foreign Relat.	Office	Office	Office	For. Rel.
IV	Moral Reform	State Rights	Commerce	Nat. Res.	Office
V	Immigration	Territories	Natural Resour.	Works	Corporat.
VI	Corporations	Labor	Works	Corporat.	Defence
VII	Natural Resour.	Legislation	Corporations	Labor	Labor
VIII	Labor	Corporations	Immigration	Territor.	Mon. Sys.
IX	Monetary Syst.	Natural Resour.	Justice	Defence	Parties
X	Defence	Works	Monetary Syst.	Immigrat.	Constit.
XI	Works	Defence	Defence	Commerce	State R.
XII	Legislation	Moral Reform	Labor	Mor. Ref.	Territ.
XIII	Commerce	Immigration	Territories	Mon. Syst.	Nat. Res.
XIV	Territories	Constitution	Moral Reform	Pensions	Legislat.
XV	Personal Rights	Personal Rights	Suffrage	State R.	Immigrat.
XVI	Suffrage	Pensions	Postal System	Constit.	Pensions
XVII	Constitution	Monetary Syst.	Constitution	Justice	Per. Right
XVIII	Pensions	Commerce	Parties	Per. Right	Industry
XIX	Parties	Parties	Personal Rights	Legislat.	
XX	State Rights	Education	State Rights	Parties	
XXI	Education	Suffrage	Education	Suffrage	
XXII	Postal System	Health	Health	Post. Syst.	
XXIII	Justice	Industry	Industry	Education	
XXIV	Industry	Postal System	Pensions	Health	
XXV	Health	Justice		Industry	

INTERPRETATION OF DATA

The material that has been presented in the preceding tables was subject to several methods of treatment in order to bring out its significance. Table IV shows the first step in the treatment by ranks. It reads as follows: commerce was not mentioned in political platforms during the years 1844-56; it ranked fifth in 1860, was not mentioned in 1864 or 1868, ranked fifteenth in 1872, etc.

Table V is derived from Table IV and reads as follows: Commerce ranked fourth in one year; fifth in one year; sixth in one year; ninth in three years; tenth in one year; eleventh in one year; fourteenth in two years; and fifteenth in two years.

The following scale of value was then used to bring out the relative ranking of these several topics throughout the entire period. The topic "Naturalization" occupied such an insignificant place that it was dropped from consideration. The remaining twenty-five topics practically cover the entire field of political discussion. Assuming that all occur in any one year and that the lowest ranking topic, the twenty-fifth, is to be given the lowest unit value, *i. e.*, one,

the twenty-fourth, two, etc., we get from Table V the following result:

Finance, Public	440	Monetary System	261	Constitution	154
Office, Public	349	Defence	224	Parties	149
Foreign Relations	342	Works	221	State Rights	137
Moral Reform	340	Legislation	212	Education	122
Immigration	283	Commerce	191	Postal System	95
Corporations	273	Territories	187	Justice	81
Natural Resources	267	Personal Rights	170	Industry	70
Labor	261	Suffrage	159	Health	32

The Democratic Platforms were subjected to the same treatment, separately, with the following results:

Finance, Public	408	Natural Resources	212	Commerce	134
Foreign Relations	274	Works	211	Parties	126
Office	266	Defence	209	Education	77
State Rights	254	Moral Reform	191	Suffrage	52
Territories	225	Immigration	190	Health	41
Labor	219	Constitution	180	Industry	32
Legislation	216	Personal Rights	164	Postal Sys.	27
Corporations	212	Pensions	149	Justice	17
		Monetary System	146		

The Republican Platforms were subjected to the same treatment, separately, with the following results:

Finance, Public	404	Justice	204	Postal Sys.	99
Foreign Relations	350	Monetary System	202	Constitution	91
Office	275	Defence	199	Parties	67
Commerce	262	Labor	197	Personal R.	54
Natural Resources	219	Territories	187	State Rights	42
Works	211	Moral Reform	178	Education	40
Corporations	208	Pensions	187	Health	32
Immigration	208	Suffrage	130	Industry	19

In order to serve as a check on this result the *five highest ranking* topics in each campaign were evaluated by giving five points to first rank, four to second rank, etc.

The results obtained were:

Finance	62	Labor	17	Natural Resources	5
Moral Reform	42	Monetary System	13	Legislation	4
Foreign Relations	33	Parties	11	Immigration	2
Office	23	Constitution	10	Pensions	1
Corporations	22	State Rights	8	Personal Rights	1
Defence	18	Territories	6	Industry	1

The results of these various treatments are brought together for easy reference in Table VI.

The second method of treatment designed to bring out the interpretation of the classified material, was the summation of linear inches devoted to each topic during the entire period treated. This is shown in Table VII, which reads as follows: Commerce was not mentioned until 1860. In that year 31 linear inches was devoted to its discussion; in 1872, 8 linear inches; etc., with a total of 966 linear inches during the entire period from 1844 to 1916. This is 3 percent (true to 1/10 of a percent) of the entire platform discussions of problems, and it ranked 12th in importance.

If the entire period covered by the national platforms is subdivided into the Pre-Reconstruction Period (1844-1868) and the Post-Reconstruction Period (1872-1916) and the latter is again divided into two periods (1872-1892 and 1896-1916) we obtain an interesting table for comparison, Table VIII.

TABLE VII
LINEAR INCHES GIVEN TO VARIOUS ITEMS IN NATIONAL PARTY PLATFORMS—SUMMARY BY YEARS

Topics:	1844	1848	1852	1856	1860	1864	1868	1872	1876	1880	1884
Commerce					31			8		17	164
Constitution	19	17	67	17	9	78	7	132	98		
Corporations					65	5		25	18	44	159
Defence		54	44			235	95	95		10	14
Education								5	84	25	19
Finance	82	103	143	99	25	28	130	161	344	93	381
Foreign Relations			100	145	32	42	68	53	53		167
Health											
Immigration	28	28	45	51	8	25	14	23	41	51	72
Industry									11		62
Justice										20	
Labor							10	78	3	49	99
Legislation	30	33	33	33					44	17	20
Monetary System	5						9	47	66	49	127
Moral Reform	536	264	275	411	219	51		38	136	265	470
Naturalization				11	4						
Natural Resources	22	30	27		20	29		43	36	19	108
Office	8	7	18	43		38	72	162	211	120	111
Parties				161				37	133	143	
Pensions							43	12	31	15	56
Personal Rights	26	26	65	32		8		22	33	18	
Postal System		3	4					7			
State Rights	41		62	83	74						22
Suffrage				9				4	7	35	96
Territories	23				19						16
Works	9	26	47	71	17					5	15
Topics:	1888	1892	1896	1900	1904	1908	1912	1916	Total	Percent	Rank
Commerce	28	69	98	121	76	60	151	203	966	3.0	12
Constitution	132	98				22	43	14	523	1.6	18
Corporations	143	112	187	370	189	572	465	175	2529	7.5	4
Defence	13	14	18	143	41	89	56	635	1556	4.8	8
Education	29	77	19	7	2	19	37	9	332	1.0	23
Finance	476	229	433	137	224	303	431	354	4176	12.9	1
Foreign Relations	152	166	168	264	167	187	110	815	2689	8.3	3
Health						50	92	32	174	.5	24
Immigration	93	70	24	49	9	48	52	22	803	2.5	14
Industry						75	61	258	567	1.4	20
Justice	15		29		2	57	203	23	349	1.1	22

TABLE VII (Concluded)

Labor	122	125	111	168	291	635	393	299	2383	7.3	5
Legislation		18	35	45	20	104	24	19	475	1.5	19
Monetary System	66	190	731	479	36	216	228	51	2300	7.1	6
Moral Reform	90	79	133	261	128	48	32	97	3533	10.9	2
Naturalization	6	3							24	.1	26
Natural Resources	219	101	122	86		159	372	77	1470	4.5	9
Office	124	194	99	73	101	237	180		1798	5.5	7
Parties		37			40	126	236	99	1012	3.1	11
Pensions	68	61	78	89	19	38	22	10	582	1.8	15
Personal Rights			41		36		66	19	392	1.2	21
Postal System	4	32		6	6	39	43	27	171	.5	25
State Rights			70			53	120		527	1.6	17
Suffrage	102	69	40	43	24	62	18	65	574	2.8	16
Territories	93	58	75	504	136	185	112	145	1366	4.3	10
Works	8	50	25	106	92	124	207	95	897	2.8	13

TABLE VIII

SPACE GIVEN TO VARIOUS ITEMS IN NATIONAL PLATFORMS—SUMMARIZED BY PERIODS

Topics	Linear Inches					Percents				
	I	II	III	IV	V	I	II	III	IV	V
Commerce	966	31	995	286	709	3.0	.6	3.7	3.1	4.0
Constitution	523	214	309	460	79	1.6	4.4	1.1	4.9	.4
Corporations	2529	70	2459	501	1958	7.5	1.4	9.1	5.4	10.9
Defence	1556	428	1128	146	982	4.8	8.6	4.2	1.6	5.5
Education	332	0	332	239	93	1.0	0.0	1.2	2.6	.5
Finance	4176	610	3566	1684	1882	12.9	12.4	13.2	18.1	10.5
Foreign Relations	2689	387	2302	591	1711	8.3	7.9	8.5	6.3	9.5
Health	174	0	174	0	348	.5	0.0	.6	0	1.9
Immigration	803	199	604	350	1007	2.5	4.0	2.2	3.8	5.6
Industry	467	0	467	73	861	1.4	0.0	1.7	.8	4.8
Justice	349	0	349	35	663	1.1	0.0	1.3	.4	3.7
Labor	2383	10	2373	486	1897	7.3	.2	8.8	5.2	10.6
Legislation	475	129	346	99	247	1.5	2.6	1.3	1.1	1.4
Monetary System	2300	14	2286	545	1721	7.1	.3	8.8	5.9	9.6
Moral Reform	3533	1756	1777	1078	699	10.9	35.6	6.6	11.6	3.9
Naturalization	24	15	9	0	0	.1	.3		.1	.0
Natural Resources	1470	128	1342	426	816	4.5	2.6	5.0	4.6	4.6
Office	1798	186	1612	922	690	5.5	3.8	5.9	9.9	3.1
Parties	1012	161	851	350	501	3.1	3.3	3.1	3.8	2.8
Pensions	582	43	539	231	256	1.8	.9	2.0	2.5	1.4
Personal Rights	392	157	235	73	162	1.2	3.2	.9	.8	.9
Postal System	171	7	164	43	121	.5	.1	.6	.5	.7
State Rights	527	260	267	24	243	1.6	5.3	1.0	.3	1.3
Suffrage	574	9	567	313	252	2.8	.2	2.0	3.4	1.4
Territories	1366	42	1324	167	1157	4.3	.9	4.9	1.8	6.5
Works	897	170	727	78	649	2.8	3.5	2.7	.8	3.6

- Column I: 1844 to 1916
- Column II: 1844 to 1868 (Pre-Reconstruction Period)
- Column III: 1868 to 1916 (Post-Reconstruction Period)
- Column IV: 1872 to 1892
- Column V: 1892 to 1916

In Table IX is given the summary of all state platforms on national issues in non-presidential years from 1889 to 1914. The rankings in this table are determined by the number of distinct platform proposals. The scale of values used is the same as for Table VI (five highest rankings). Table X shows the summary for the state platforms of 1910 on state issues; the unit used is the single platform proposal.

TABLE IX

PROPOSALS IN STATE PLATFORMS ABOUT NATIONAL ISSUES DURING NON-PRESIDENTIAL YEARS 1889 to 1914

Problems	Ranks					Values					Total
	I	II	III	IV	V	x5	x4	x3	x2	x1	
Finance	7	6	4	1	0	35	24	12	2	0	73
Office	3	3	5	3	0	15	12	15	6	0	48
Corporations	2	3	1	3	4	10	12	3	6	4	35
Monetary System	3	2	3	0	2	15	8	9	0	2	34
Labor	1	1	1	3	2	5	4	3	6	2	20
Commerce	1	0	2	1	3	5	0	6	2	3	16
Suffrage	0	1	2	2	0	0	4	6	4	0	14
Defence	1	1	0	2	0	5	4	0	4	0	13
Moral Reform	0	1	1	1	4	0	4	3	2	4	13
Pensions	0	1	0	2	3	0	4	0	4	3	11
Foreign Relations	0	0	2	1	1	0	0	6	2	1	9
Legislation	0	0	0	2	2	0	0	0	4	2	6
State Rights	0	0	1	0	1	0	0	3	0	1	4
Natural Resources	0	0	1	1	0	0	0	3	2	0	5
Personal Rights	0	0	0	2	0	0	0	0	4	0	4
Immigration	0	0	0	1	2	0	0	0	2	2	4
Territories	0	1	0	0	1	0	4	0	0	1	5
Parties	0	0	0	1	0	0	0	0	2	0	2
Works	0	0	0	1	0	0	0	0	2	0	2
Health	0	0	0	1	0	0	0	0	2	0	2
Justice	0	0	0	0	1	0	0	0	0	1	1

TABLE X

PROPOSALS IN STATE PLATFORMS ABOUT STATE ISSUES, IN 1910

Topics	Number of Proposals		Total	Rank
	Democratic	Republican		
Office	248	130	378	1
Corporations	91	65	156	2
Labor	80	78	153	3
Finance	79	66	145	4
Natural Resources	59	51	110	5
Moral Reform	49	50	99	6
Works, Public	43	37	80	7
Education	38	34	72	8
Legislation	36	24	60	9
Industry		25	55	10
Constitution	27	19	46	11
Justice	19	22	41	12
Parties	21	15	36	13
Health	5	13	18	14
Municipal Corporations	9	6	15	15
Monetary System	6	4	10	16
Pensions	3	4	7	17
Immigration	3	3	6	18
Miscellaneous	8	13	21	..

CONCLUSIONS

It has been impossible in the space allotted to this review to present its methods and results in fullest detail, but even in the present incomplete form of the study a careful scrutiny of the summaries permits us to draw a few conclusions

1. Certain problems, in their broad outlines, are necessarily persistent, since they are inherent in the structure or constituent

functions of government, *e. g.*, public finance, public office, foreign relations and national defence.

2. Certain other problems are persistent from the economic organization of society, *e. g.*, corporations (representing the capitalist), labor (representing the producer), and natural resources (representing the third factor of production).

3. A third group of problems, which the writer has classified under "moral reform," is necessarily persistent so long as there are men and women who are forward-looking, and subject to humanitarian impulses; and so long as a democratic form of government renders all social problems potentially political. The term 'moral reform' has been used in lieu of the more commonly employed term 'social reform,' for the reason that a moral judgment rather than an economic or administrative judgment is the determining factor in the voter's decision.

4. Certain other problems are relatively persistent as corollary to our governmental or economic organization and status, *e. g.*, immigration (a result of better economic opportunities in this country than obtain in other parts of the world), foreign commerce (a result of our power of economic production), state rights (a result of the historic origin of the Federal government), constitutions (fundamental limitation of governmental action), and political parties (arising from the problem of registering the popular will).

5. The responsibility for the solution of these various problems has been distributed among the three most important units of government in this country, *viz.*, national, state, and municipal, or local, government. For example, foreign relations belongs exclusively to the Federal government; conduct of elections and suffrage qualifications largely to the states; education is delegated largely to the local units.

6. There are certain tendencies evident from a careful study of the data: the problems of strict or liberal construction of the Constitution, state rights, personal rights, etc., tend to become of less importance in political discussion; while labor, corporations, and foreign relations tend to become of more importance; still other problems like public finance, commerce, and defence about hold

their own; health, industry, and justice appear to be gaining in importance; all topics of discussion are fundamentally affected by the two general trends which the writer believes he discovers beneath the surface of our national life—the trend toward more efficient nationalism and toward more complete democracy, through the socialization of industry and the democratization of parties.

7. From all that has gone before, it is safe to assume that any course of instruction whose purpose is to prepare for intelligent suffrage through the exercise of civic judgments upon concrete problems should contain at least the following topics: finance—federal, state, municipal, and school district; office, elections, civil service, etc., including the related topics of parties and suffrage as applied to the locality; corporations; labor; foreign relations, including relations to defence and commerce; natural resources, conservation and reclamation; monetary system—money, banking, and credit; and the present moral issues of nation, state, and community.

8. Recognizing with Professor Keatinge of Oxford (*Studies in Education*), that grave difficulties lie in the way of any adequate treatment of politics in the public school, but likewise recognizing with him the necessity of such preparation in an increasingly democratic state, the writer believes such instruction is feasible and necessary. The following quotation expresses his view of the need: "To any one who considers that the final decision as to policy and legislation of every kind, imperial, financial, and social, is made, theoretically at any rate, by the mass of individual voters, to any one who considers further that the number of male voters is in the near future sure to be largely increased and that probably there will be added to them a large number of female voters, there can be little doubt that an important duty of our schools is to give a training which shall enable our children, as they grow up, to take an intelligent interest in political life, and to register their votes when the time comes for them to do so in connection with some intelligible body of principles."

CHAPTER VIII

THE HISTORICAL INFORMATION ESSENTIAL FOR THE INTELLIGENT UNDERSTANDING OF CIVIC PROBLEMS

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OBJECT

The present study is an outgrowth of the study reported by Horn in the *Sixteenth Yearbook* of this Society, Chapter X. Horn sought to discover what history is most needed for the intelligent understanding of modern problems, conditions and activities. The present investigation is more limited in scope. It seeks to discover what history is most necessary to the intelligent understanding of modern *political* problems, conditions and activities. As in the case of the former study, no brief is held for this or any purpose as the one which should determine the content of the history curriculum.

METHOD

The investigation was undertaken with the same hypothesis as that used by Dr. Horn, viz.: "that if a representative list of the more crucial modern problems could be secured, and if among the books dealing with each problem, those be selected which give the clearest statement of that problem, it might be expected that these books would contain at least the sort of history, or amount of historical reference which in the judgment of the authors is essential to a proper understanding of the modern problems they are discussing."

Accordingly, members of the staff in the Department of Political Science of the State University of Iowa were asked to make a list of crucial present-day political problems and to indicate a book dealing in a representative manner with each of these problems. Books which dealt primarily with local conditions, and also

books which were plainly historical were barred from consideration.

The following list of twenty-two books was chosen as a basis of the study:

1. Adams—*Science of Finance*. (Taxation)
2. Bolen—*Plain Facts as to the Trust and the Tariff*, Pt. II.
3. Brown—*Transportation Rates and their Regulation*.
4. Childs—*The Short Ballot Principle*.
5. Committee of Fifty—*The Liquor Problem*
6. Commons—*Proportional Representation*
7. Fairchild—*Immigration*
8. Goodnow—*Administrative Law*
9. Hall—*Outline of International Law*
10. Haynes—*Child Labor*
11. Hunter—*Poverty* (Poor Relief)
12. Jenks—*The Trust Problem*
13. Jones—*Statute Law-Making*
14. Mathews—*Woman Suffrage*
15. Mullen—*The A. B. C. of National Defense*
16. Munro—*Municipal Government*
17. Rav—*Political Parties and Practical Politics*
18. Reinsch—*Readings on American Government* (Civil Service)
19. Ryan—*A Living Wage* (Minimum Wage)
20. Seager—*Social Insurance*
21. Taft—*Popular Government* (Initiative, Referendum)
22. *Report Relative to Legislative Reference Bureaus* by librarian of Congress in *Senate Documents*, 62nd Congress, 1st Session, No. 7

To supplement the data secured from these books, twenty-two articles, corresponding in subject matter with the material found in each of the several books, were checked in the *Cyclopedia of American Government*. The data thus obtained were compiled separately and are frequently compared with those from the books.

In analyzing the material, both in the books and in the cyclopedia articles, an attempt was made to secure the following classes of data: (1) the historical characters referred to in each book; (2) specific dates, and the frequency of reference to the various periods in history;¹ (3) the frequency of reference to the leading foreign countries; and (4) historical movements, events, conditions and problems.

In analyzing the material of this last class an outline given by Albion W. Small in his *General Sociology* was used as a basis. According to Mr. Small's presentation, there are six general heads under which the efforts and activities of man may be grouped, viz:

¹For periods prior to 1860, the classification was made to correspond to that followed by Dr. Horn in his study in the *Sixteenth Yearbook*. Following the date 1860, ten-year periods were used.

- I. Achievements for the Protection of Health.
- II. Achievements for the Promotion of Wealth.
- III. Achievements in Harmonizing Human Relations.
 - A. Political Achievements.
 - B. Industrial and Property Interests.
 - C. Opportunities for Culture.
- IV. Achievements in Discovery and Spread of Knowledge.
- V. Achievements in Fine Arts.
- VI. Achievements in Religion.

Under each of these main headings Mr. Small indicates a large number of topics and sub-topics. While it was not found advisable to use these sub-topics in tabulating the data from the books and the encyclopedia, they were of use in interpreting the headings.

In checking and classifying these historical data, the following rules and regulations were observed:

- (1) Score only those references that are clearly historical.
- (2) In case of historical movements, events and problems, indicate them in the specific terms of the author, and place the reference under the main section of the outline where it seems most logically to belong. In case the reference clearly has a double significance it may be checked under two headings, as, for example, under "Protection of Health" and under "Achievements in Harmonizing Human Relations."²

- (3) Score any given item but once in a single paragraph.
- (4) Dates in parentheses are not to be checked.

The analysis of a single paragraph may serve further to illustrate the classes of data desired, and the method used in checking the material. The following paragraphs taken from a contemporary writer upon "Equal Suffrage" will serve as the basis of this analysis.

"The movement for equal suffrage may be said to have begun in England toward the close of the eighteenth century. In 1792 Mary Wollstonecraft published a book on the *Vindication of the Rights of Women* which, though greeted with a storm of ridicule and abuse, gave the first considerable impulse to a discussion on the subject. In 1797 Charles Fox is quoted as saying that all the superior classes of the female sex in England must be more capable of

²A legislative measure dealing with health regulations, or one providing for the use of safety devices might fall thus under two headings.

exercising the elective suffrage with deliberation and propriety than the uninformed individuals of the lowest class of men to whom the advocates of universal suffrage would extend it. Bentham likewise remarked upon the injustice of refusing women the right to vote. In 1835 Bailey strongly advocated the extension of the suffrage to women in his treatise entitled *The Rationale of Political Representation*. Likewise, Benjamin Disraeli in 1848 declared in the House of Commons that he saw no reason for denying women the right to vote. But the most influential advocate of equal suffrage in England was John Stuart Mill, who espoused the cause with great power in his book on *The Subjugation of Women*, published in 1869. Moreover, in 1867 Mill championed the cause of equal suffrage in the House of Commons by proposing it as an amendment to the Reform Bill then pending."

The specific items of historic interest in this paragraph are (1) Equal Suffrage, a subject to be classified under "Achievements in Harmonizing Human Relations;" (2) the Reform Bill, likewise under "Achievements in Harmonizing Human Relations," and (3) England, to be placed under "Leading Foreign Countries." Equal suffrage is mentioned three times, but since it is within a single paragraph, the subject is checked only once. England is mentioned twice, but is checked once.

The specific dates occurring in this paragraph are 1792, 1797, 1835, 1848, 1867, 1869. The general period of the eighteenth century is also mentioned.

The historical characters mentioned are Bailey, Bentham, Benjamin Disraeli, Charles Fox, John Stuart Mill, and Mary Wollstonecroft. Each of these persons is checked once, notwithstanding the fact that Mill's name appears twice.

RESULTS

Persons. In analyzing the twenty-two books, a total of 563 names was found. Of this list many appeared but once; others appeared several times but in connection with a single subject. Twenty-three of the names appeared in connection with at least three subjects. These names are as follows:

TABLE I
REFERENCES TO PERSONS IN TWENTY-TWO BOOKS

	Different Problems	Number of times mentioned	Product
1. Roosevelt, Pres.	10	25	250
2. Cleveland, Pres.	7	9	63
3. Smith, Adam	5	11	55
4. McKinley, Pres.	5	9	45
5. Taft, Pres.	4	11	44
6. Jackson, Pres.	4	11	44
7. Grant, Pres.	5	8	40
8. Mill, John Stuart	5	8	40
9. Wilson, Pres.	6	6	36
10. Garfield, Pres.	4	8	32
11. Malthus	4	8	32
12. Montesquieu	3	7	21
13. Eliot, Charles W.	4	4	16
14. Hamilton, Alexander	4	4	16
15. Harrison, Pres. W. H.	3	5	15
16. Walker, Francis	3	5	15
17. Hughes, Charles Evans	3	4	12
18. Lincoln	3	4	12
19. Bryce, James	3	3	9
20. Clay, Henry	3	3	9
21. Cobden, Richard	3	3	9
22. List, Frederick	3	3	9
23. Washington, Pres.	3	3	9

In analyzing the twenty-two articles in the *Cyclopedia of American Government*, seventy-nine names were found. Only five of these names, however, were found in connection with more than one subject. The names ranking highest in these articles are shown in Table II.

TABLE II
REFERENCES TO PERSONS IN TWENTY-TWO CYCLOPEDIA ARTICLES

	Number of Articles	Number of times mentioned	Product
Cleveland	4	6	24
Taft	4	6	24
Roosevelt	3	4	12
Wilson	2	5	10
Wright, Francis	2	2	4

Thus this, like previous studies, seems to indicate that in discussing modern civic problems authors refer more frequently to the names of presidents than to any other group. Six of the names—Cleveland, McKinley, Jackson, Grant, Lincoln, and Clay—are found among the list obtained in a similar study by the graduate students of the University of Illinois. Moreover, five of the names, Roosevelt, Adam Smith, John Stuart Mill, Malthus, and Wilson, occur in the list obtained by Horn. On the other hand, it will be observed

that the list varies widely from that presented in Bagley's "Hall of Fame," in which the names were derived from current textbooks in elementary American history.

Dates. In the books analyzed, 214 dates were found, and in the *Cyclopedia of American Government* 89, a total of 221, many of which appeared but once. The following twenty dates, eighteen of which are in the period since 1890, appear most frequently:

TABLE III
REFERENCES TO DATES IN BOOKS AND CYCLOPEDIA ARTICLES COMBINED

Date	Different Problems	Times Mentioned
1882	9	34
1887	14	34
1890	20	66
1893	14	33
1894	14	54
1896	13	43
1897	17	53
1898	16	41
1899	11	35
1900	18	73
1901	21	41
1903	15	36
1904	11	37
1906	10	33
1907	13	61
1908	13	71
1909	12	45
1910	17	78
1911	14	35
1912	19	69

Recent dates obviously appear much more often in discussion of these modern political problems than do dates more remote. Moreover, the dates commonly required in the study of history, and those recommended by the members of the American Historical Association, are not frequently referred to. The date 1492 was found but once, and that in connection with the problem of immigration. In like manner, the date 1607 appeared but once, and 1812 but six times, while 1765, and April 14th, 1861, were not found in any of the books or articles. More than 90 percent of the dates mentioned were subsequent to 1812, while (see Table IV) in current textbooks in elementary history less than 46 percent of the space is devoted to this period. The contrast is even greater if limited to the period since 1860.

Historical Periods. A study of the frequency of reference in these books and articles to historical periods indicates that in discussing modern problems, authors refer frequently to recent periods, whereas in the elementary texts much attention is given to more remote periods. The data for American History from the present study are summarized in the table below, along with the data from the studies by Horn, and by Bagley and Rugg. In the latter study the data are those for textbooks published between 1904 and 1812.

TABLE IV
HISTORICAL REFERENCES CLASSIFIED BY PERIODS

Period	Horn International Cyclopedia Books	Bagley & Rugg Elementary Texts	Present work
Unclassified	3.7		
Disc. and Exploration	0.1	8.27	0.93
Col. to 1764	2.5	19.62	2.46
1764-1783	3.8	13.69	1.72
1783-1812	1.8	14.17	4.38
1812-1861	4.7	21.00	16.39
1861-1916	5.7	24.67	74.12

The analysis of the period from 1861 to 1916 as found in the present investigation, follows in Table V:

TABLE V
REFERENCES TO MODERN PERIOD FURTHER ANALYZED

Period	Percentage of references to Each Period
1860-1870	3.58
1870-1880	7.04
1880-1890	10.53
1890-1900	20.53
1900-1910	22.17
1910-1917	10.27
Total since 1860	74.12

The frequency of reference to foreign countries, as found in this study, corresponds closely to the results obtained in the study by Horn. He reports that the countries most frequently mentioned are England, Germany, France and Russia. The present study shows that in a discussion of modern civic problems authors refer to England more than twice as often as to any other foreign country; Germany ranks second and France third.

The portion of the study which has to do with the various phases of history as a background for civic problems is still incom-

plete, but the data so far gathered seem to suggest certain conclusions. In discussing modern civic problems the authors we have examined make very few references which could be classified under "Achievements in Discovery and Spread of Knowledge," "in Fine Arts" or "in Religion." Especially is this true of "Fine Arts," which are scarcely mentioned in any of the books or articles analyzed. Under "Achievements for the Protection of Health," a few topics clearly receive the most frequent mention. Among these are sanitation, care of the sick, pure food, improved safety devices, health regulations in factories, and recreation. In connection with "Achievements for the Promotion of Wealth," the chief topics of discussion are trade and commerce, manufacturing, agriculture, transportation, wages, and labor. By far the greater number of historical movements and events are classified under "Achievements in Harmonizing Human Relations." The subject that receives the most frequent mention is legislation—federal, state, and foreign. The specific topics most frequently mentioned are: Tariff, Municipal Government, Political Parties; Boards, Bureaus and Commissions; Civil Service, Elections, the Federal Constitution, Referendum, Initiative, Short Ballot, Taxation, Transportation, and Poor Relief. Referring back to the list previously given of the titles of books included in this study, it will be seen that each one of these topics (with the sole exceptions of the Federal Constitution, and Elections) is specifically the subject of one of the books included. Nine of the twenty-two books are thus represented: this may mean that these nine books are more important than the rest, or merely that they are longer. Thus, this last list, though apparently significant, conceivably has very little meaning.

An investigation of this sort cannot, of course, prescribe the details of a course of study. But in general, the indications seem to be that, aside from the names of presidents, those of economists are the names with which a student of modern political problems needs to be familiar; that a knowledge of recent dates (especially since 1890) and of the recent period in American history (again especially since 1890, for 53 percent of all references to periods belong to this one), together with a knowledge of the Federal Consti-

tution, is that American historical knowledge which is for him the most illuminating; and that of foreign lands, England outweighs all the rest in contributions towards the problems he has to solve.³ In conclusion it may be well to repeat that this study has not aimed to consider the historical background of any other than this political phase of modern life.

³This apparent importance of England may however be due to our common language. Works in other languages are on the whole much less accessible to such authors as wrote the books in question.

CHAPTER IX

A METHOD OF DETERMINING MISPLACEMENTS OF EMPHASIS IN SEVENTH AND EIGHTH-GRADE HISTORY

L. R. MARSTON, H. C. MCKOWN AND W. C. BAGLEY

(A study made at the School of Education, University of Illinois.)

INTRODUCTION

The report on minimal essentials in American history which appeared in the *Sixteenth Yearbook* attempted to state present-day minimal essentials as determined by an analysis of textbooks used in the seventh and eighth grades and by the recommendations of the Committee of Eight of the American Historical Association. The data regarding the textbooks were summarized from a detailed study of twenty-five texts,¹ the results of which were published as *Bulletin No. 16 of the School of Education, University of Illinois*. Both the original study and the summarized report emphasized the fact that this method could determine only what the minimal essentials are as the subject has been taught in the past and as it is taught today. It cannot determine what these essentials should be, although it may trace the changes that have been taking place and consequently reveal tendencies. The study in question, for example, disclosed significant tendencies (as, for example, the lessening emphasis upon military affairs during the past three decades) which are doubtless symptomatic of changing ideals as to the aims that the elementary teaching of history should seek to realize.

The study reported herewith attempts to determine more precisely some of the misplacements of emphasis in the present-day and relatively recent teaching of elementary history. In order to make this determination, certain criteria must be selected against which to measure present practices. As permitting application to

¹Eight of these textbooks were published prior to 1890; nine were published between 1902 and 1912.

the textbooks used in the seventh and eighth grades, the following criteria were chosen:—

(1) Are the relative emphases given to events in the textbooks consistent with the emphases given to the same events in standard books of reference?

(2) Are the relative emphases given by the textbooks consistent with the judgment of students of history regarding the events that should be emphasized?

(3) Are the relative emphases given by the textbooks consistent with the need for historical knowledge in interpreting current discussions of national problems as these are revealed in periodical literature?

To subject the content of the courses in history taught in the elementary schools to these and other desirable criteria is something that should be done. Indeed, when one reflects upon the fundamental bearing of universal elementary education on our national life, it is inconceivable that the actual content of instruction in any subject of study should be permitted to escape the closest possible scrutiny and evaluation by means of impartial and objective methods, which are themselves susceptible of scientific control and evaluation. To make such an examination of all the materials now comprising the content of elementary history, however, would involve an expenditure of time and money out of the question in connection with the present study. All that could be done here, as in the investigations of history-materials reported in the *Fourteenth Yearbook* and in the *Sixteenth Yearbook*, was to explore a very limited area of the field for the purpose primarily of testing a method of procedure.

The study was consequently limited to one type of textbook materials—the names of persons that are given prominence by twenty-five elementary textbooks in their treatment of the period of American history between the years of 1765 and 1865. These are listed in the *Bulletin* above referred to under the caption “The Hall of Fame.” Two lists are given, one comprising the twenty-five names most frequently mentioned in the textbooks as prominent in the events of civil life, the other comprising the twenty-five names most frequently mentioned as prominent in military and

naval affairs. In each case the names are listed in the order of frequency and this order consequently forms an index of the relative emphasis accorded by the textbooks to the persons named, and more indirectly to the events with which the names are associated. As was pointed out in the original study, the personal or concretely human elements are especially important and formative in the study of history by children and young adolescents; the lasting associations cluster about names rather than about the more abstract, more impersonal events and movements; consequently it is fair to assume that misplacements of emphasis here will be symptomatic of other and conceivably more fundamental distortions.

METHOD

The two lists of names presented in the *Bulletin* as constituting the textbooks' "Hall of Fame" may be considered as 'ratings' of the importance of persons named as figures in American history. To test the validity of these ratings, three other types of ratings of the same men were secured, each type representing one of the criteria referred to above:—

(1) *The "Encyclopedia Ratings."* The following encyclopedias and dictionaries of biography formed the basis of this part of the study.

For both civil and military lists:—

The Universal Cyclopedia and Atlas

The Encyclopedia Britannica

Appleton's Cyclopedia of American Biography

The New International Cyclopedia

Drake's Dictionary of American Biography

Harper's Encyclopedia of American History

For the civil list only:—

Lamb's Biographical Dictionary of the United States

National Encyclopedia of United States History

The method here was to determine the amount of space devoted to each person in the text that appeared under his name, and to arrange the names in the order of the total amount of space each received. Four men found a place in both lists; consequently, each of these four names was credited in the civil list only with the amount of space devoted to him as a participant in civil affairs, and credit in the military list was similarly limited.

(2) *The "Historians' Ratings."* The two lists of names were sent to 205 teachers and students of history in American schools and universities. The names in each list were arranged in alphabetical order and a ranking of these names in the order of their "relative importance in American history" was requested. Seventy replies were received, of which, however, only thirty-three could be used.

(3) *The "Magazines' Ratings."* In order to determine whether the relative emphasis given to the persons named in the textbooks bore a definite relation to the need for information concerning these persons in interpreting current discussions, 'samplings' from the files of four magazines covering a period of ten years (1904-1913, inclusive) were read, and two lists representing the frequencies of mention were constructed. The samplings were distributed over the ten years in such a way that each year was represented by approximately the same number of issues. References to the four names appearing in both civil and military lists were treated separately, as in the case of the encyclopedia ratings. Each name was credited with one reference only for each article in which it appeared. The magazines and the number of issues of each that were read were as follows:—

<i>Atlantic Monthly</i>	20 issues
<i>The Nation</i>	78 issues
<i>Colliers</i>	38 issues
<i>Saturday Evening Post</i>	20 issues

In the tables that follow, the frequencies of reference in all of the magazines are combined.²

RESULTS AND INTERPRETATIONS

The accompanying tables show the comparisons and correlations of the several rankings, together with the significant displacements of the textbooks' rankings as compared with the other rankings. In determining these displacements, all of the rankings (including those of the textbooks) were combined by adding the rankings for each name and arranging the names in order from the

²In the magazines that were examined, seven of the fifty names that appear in the textbooks' lists were not mentioned: Samuel Adams in the civil list, and Thomas, Howe, Schnyler, Harrison, Early, and Gage in the military list. These were given the lowest place in the two magazine rankings.

lowest to the highest total. The lists as presented herewith are given in the order of these 'amalgamated rankings.'

It is especially noteworthy that the several rankings of men prominent in political life are in general much more highly correlated with one another than are the rankings of men prominent in military life. The textbooks' rankings show particularly low correlations with the other rankings in the military list, and this adds confirmation to the general opinion that the textbooks have tended to distort military history. More specifically, the traditional treatment of our wars by the textbooks has apparently underemphasized the achievements of the navy, and given too large a prominence to the British generals in the War of the Revolution.

The textbooks' apparent misplacements of emphasis in the treatment of political affairs, in so far as a study of this type is competent to reveal such misplacements, are less numerous and less wide. It is significant, however, that in all probability, the textbooks have not done full justice to Franklin, Webster, and Jefferson Davis.

The names that should in justice be added to these two lists are fewer than one would expect, if the suggestions from historians and magazines are an index. The textbooks that are used in the seventh and eighth grades have always emphasized the political and military history of the nation, and with changing conceptions of the functions of this elementary study of history, it is altogether probable that other names will come to replace those that have been, and are being given the positions of prominence. The following names not included among the twenty-five most frequently mentioned by the textbooks were suggested by two or more historians or indicated by ratings from *The Nation*:

TABLE I
POSSIBLE ADDITIONS TO NAMES EMPHASIZED IN ELEMENTARY TEXTBOOKS

From Historians	
To Civil list	To Military list
Seward 8 mentions	John Paul Jones 4 mentions
Marshall 6	O. H. Perry 3
Chase 4	Longstreet 2
Gallatin 3	Decatur 2
Garrison 3	
Sumner 2	
Morse 2	
C. F. Adams 2	
From <i>The Nation</i>	
To Civil List	To Military List
Marshall	A. S. Johnston
Seward	
Chase	
Otis	

TABLE II

RANKINGS OF MEN PROMINENT IN CIVIL LIFE BETWEEN 1765 AND 1865

Names	Ranking according to				
	Amalgamated Ranking	25 text-books	8 encyclopedias	33 historians	4 magazines
Lincoln	1	1	1	2	1
Washington	2.5	2	4	1	3
Jefferson	2.5	3	2	3	2
Franklin	4	10.5	3	6	4
Andrew Jackson	5	4	8	8	5
Hamilton	6	7	5	4	9.5
Clay	7.5	8	10	9	6
Webster	7.5	14	7	5	7
John Adams	9	5	6	11	12.5
J. Q. Adams	10	9	9	12	9.5
Madison	11	6	11	7	17
Monroe	12	10.5	12	17	8
Calhoun	13	14	14	10	17
J. Davis	14	20.5	15	18	11
S. A. Douglas	15	16.5	20	15	14.5
Buchanan	16	18.5	13	21	14.5
VanBuren	17	14	22	20	12.5
Henry	18	12	21	16	23
Samuel Adams	19	16.5	18	13	25
Tyler	20	18.5	19	22	20
Polk	21	20.5	16	19	19
Jay	22	24.5	23	14	23
Burr	23.5	22.5	24	25	17
W. H. Harrison	23.5	24.5	17	24	23
Taylor	25	22.5	25	23	21

TABLE III

CORRELATIONS OF RANKINGS (CIVIL LIST)

	Text-books	Encyclopedias	Historians	Combined Magazines
Textbooks		81	81	75
Encyclopedias	81		80	83
Historians	81	80		69
Combined Magazines	75	83	69	
Average	79	81.3	76.7	75.7

TABLE IV

DISPLACEMENT OF TEXTBOOKS' CIVIL RANKINGS OF FOUR PLACES OR MORE FROM AMALGAMATED RANKINGS

A. Textbooks apparently <i>overemphasize</i> the importance of	Displacement
Patrick Henry	6 places
Madison	5 "
John Adams	4 "
B. Textbooks apparently <i>underemphasize</i> the importance of	
Franklin	6.5 places
Webster	6.5 "
Jefferson Davis	6.5 "

TABLE V
RANKINGS OF MEN PROMINENT IN MILITARY AND NAVAL AFFAIRS BETWEEN
1765 AND 1865

Names	Ranking according to				
	Amalgamated ranking	25 text-books	6 encyclopedias	33 historians	4 magazines
Grant	1	3	1	2	1
Washington	2	1	4	1	3
Lee	3	2	3	3	2
Sherman	4	4	2	4	6.5
McClellan	5	6	7	8	4.5
"Stonewall" Jackson	6	12.5	10	5	8
Arnold	7	9	5	19	11
Greene	8	12.5	6.5	7	18.5
Sheridan	9	17	13	9	9.5
A. Jackson	10.5	23.5	9	11	6.5
Scott	10.5	14.5	11	10	14.5
J. E. Johnston	12	7	15	12	18.5
Cornwallis	13	5	14	16	18.5
Farragut	14	23.5	6.5	6	23
Burgoyne	15	11	18.5	17	13
Meade	16	23.5	21	14	4.5
Taylor	17	14.5	12	15	23
Hooker	18.5	23.5	18.5	18	9.5
Clinton	18.5	10	18.5	17	13
Thomas	20	18	20	13	23
Howe	21	8	24	21	23
Schuyler	22	19	16	23	23
W. H. Harrison	23	23.5	18.5	18	23
Early	24	20.5	23	25	23
Gage	25	20.5	23	25	23

TABLE VI
CORRELATION OF THE RANKINGS (MILITARY LIST)

	Text-books	Encyclopedias	Historians	Combined Magazines
Textbooks		55	57	36
Encyclopedias	55		83	55
Historians	57	83		61
Combined Magazines	36	55	61	
Average	49.3	64.3	67	50.7

TABLE VII
DISPLACEMENTS OF TEXTBOOKS' MILITARY RANKINGS OF FOUR PLACES OR
MORE FROM AMALGAMATED RANKINGS

A. Textbooks apparently <i>overemphasize</i> the importance of	Displacement
Howe	13 places
Clinton	8.5 "
Cornwallis	8 "
J. E. Johnston	5 "
Burgoyne	4 "
B. Textbooks apparently <i>underemphasize</i> the importance of	
A. Jackson	13 places
Farragut	9.5 "
Sheridan	8 "
Meade	7.5 "
"Stonewall" Jackson	6.5 "
Hooker	5 "
Greene	4.5 "
Scott	4 "

SECTION II

A SYMPOSIUM ON THE PURPOSES OF HISTORICAL INSTRUCTION IN THE SEVENTH AND EIGHTH-GRADES

By J. Q. Dealey, C. A. Ellwood, E. B. Greene, A. B. Hart, W. H. Mace, David
Snedden and an Anonymous Contributor
Introduction and Summary by W. C. Bagley

INTRODUCTION

Studies of minimal essentials in American history have appeared in the reports of the Committee on Economy of Time presented in the *Fourteenth Yearbook* and *Sixteenth Yearbook* of this Society. These studies have hitherto been limited to problems that were susceptible of empirical treatment, and have been concerned chiefly (1) with the actual content of seventh-grade and eighth-grade instruction in American history as this is revealed in the textbooks, and (2) with possible deficiencies in the present-day content as these are revealed by the demands which current literature of various types may be assumed to make upon the historical information of its readers.

The symposium presented in the following pages attacks the problem of minimal essentials in history from a quite different point of view. It represents an attempt to formulate aims or objectives for the teaching of elementary history, and to evaluate current aims and objectives. Not *what is* but *what ought to be* is the point at issue here—and not “what ought to be” as determined by a circumscribed examination of a particular need (such as the need for historical information in interpreting current literature), but “what ought to be” from the point of view of realizing national ideals.

In arranging for this symposium, a letter was sent to twelve men: one philosopher; four historians prominent in the field of American history; two sociologists; two specialists in the teaching of history; one professional student of education whose chief interest is in the sociological foundations of education; one superintendent of schools who is also a student of history; and one business

man who has been interested in the influence of elementary history upon national ideals.

The seven contributions printed herewith were received in response to this letter, the essential parts of which follow:

“The Committee of the Department of Superintendence on Economy of Time in Elementary Education has asked me to organize a symposium on the possibilities and present weaknesses of the instruction in American history now given in the upper grades of the elementary school. In view of the large influence that this initial study of our country’s history must have in shaping our national ideals, the committee believes that the time is opportune for a thorough-going discussion of the aims and objectives that should govern the content and the spirit of the instruction. As at present constituted, the elementary work in history is generally regarded as having for its purpose the development of “good citizenship” and especially the inculcation of patriotism. It has been and is still concerned primarily with our political and military history, although there has been a tendency in the past two decades to give a larger emphasis to social, industrial, and economic development. The question in the minds of the members of the committee is whether the bearing of this elementary study of the national history upon good citizenship cannot be more adequately defined. What specifically should this basic work attempt to accomplish and what changes in the content and spirit of the instruction are essential if the desired ends are to be attained?”

I

J. Q. DEALEY

Professor of Social and Political Science, Brown University

In this symposium my interest is concerned more with the "possibilities" than with the "weaknesses" of the instruction in American history now given in the upper grades of the elementary schools. Believing thoroughly, as I do, in the need for a greater "economy of time in education," I would yet stress as of equal, if not greater importance the need of real efficiency in teaching. Furthermore, instruction in the grades presumably can be given more effectively if the work of instruction and the content of the subject matter are both brought into relation with the larger education of the secondary schools and the college.

I would therefore venture to suggest that efficiency in the teaching of history and economy of time in the grades depend largely (1) on the personality and intelligence of teachers, and (2) on the freedom and initiative allowed these in determining the methods they use and the content of the subject matter they impart, provided that there is a general understanding among the teachers of history as to the end to be attained through the instruction they furnish.

In respect to the first point I should assume that in general the average teacher at present in the grades, through lack of a broad education, is incompetent to give capable instruction in history. In place of these, those responsible for city or county systems of instruction should select a well-trained capable person and place him in charge of the teaching of history. This person should be allowed a voice in the selection of his assistants and should be held responsible for the efficient presentation of history in all the secondary and graded schools of the city or county. Assistants should invariably be graduates of colleges, preferably with some training in education, and the importance of their work should be shown by the payment of proper salaries. The several heads of instruction in history within a given state, in connection with an advisory

committee selected from the departments of history, economics, politics, and sociology of neighboring colleges or universities, should be required to meet monthly or bimonthly for purposes of discussion in respect to problems of teaching, both as to content and as to method. Under some such system as this the importance of the teaching of history would be emphasized and instructors would be stimulated to 'make good,' so as to win reputations as capable teachers, and consequent promotion.

As to the second point, it would seem unwise to require capable and intelligent teachers to confine themselves to stipulated textbooks, or to routine methods of instruction. An intelligent teacher of good personality is a better source of instruction than nine tenths of the textbooks now in use. In the classes in history it might be well for instructors occasionally to prepare simple lectures on the subject matter, so as to train the ear of the pupil as well as the eye, and also to begin instruction in the taking of notes from lectures and from a minimum of carefully selected readings. History in this social age should no longer be confined primarily to political and military history, but should include the essentials of social evolution, stressing the development of man and his achievements, in addition to the development of the nation. In this transitional century of world history, teachers should be allowed large discretion in method and content, so as to allow a varying emphasis according as social, economic, national, or international interests are uppermost in men's thoughts. The pupils of course must master the important details of civic organization, structure, and function, but the real object of each teacher should be to arouse interest in the larger affairs of national and international life as well as in the activities of local environment. In addition, he should aim to explain to his pupils the inter-relationships of human society, to develop an appreciation of the social and political ideals of progressive nations, especially those on the Western Continent, and, as an aid in this, to have them become familiar with the names and lives of great achievers in national and social progress. He should also be able to explain, as opportunity offers, the importance of some past or new invention or scientific discovery, or some great achievement in national culture. Especially

should he be capable of explaining simply the principles of American democracy, such as those underlying a federation, the written constitution, the party system, and a citizen's rights and obligations. Obviously, instruction in the grades must be simpler than in secondary schools, yet the distinction should be chiefly in quantity, not in quality; for, after all, the finest and best of human knowledge can be comprehended by children as easily as by adults. Since relatively so few children pass from the grades to higher education, it is surely the height of absurdity for a nation to allow the great mass of its future citizens to enter economic life without a gleam of national hope and aspiration. Probably if interest in such matters were aroused in graded schools, a far larger number would enter the schools of higher education, so as to become familiar with the movement of national and international politics and with the steps in social progress.

II

CHARLES A. ELLWOOD

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In my opinion the aim of teaching American history in the elementary schools should always be "good citizenship." This, to be sure, should be the general aim of the whole curriculum, but in the teaching of the social studies, such as our national history, it should be especially emphasized. I mean by "good citizenship" not simply the making of intelligent voters, desirable as that may be, but the fitness of the individual for community and national service on the broadest human lines. I should hold it to be essential to good citizenship, for example, that the individual be a good friend and neighbor, a good father or mother, an efficient producer and a wise spender, as well as loyal to his country. To be a good citizen, in other words, one must share fully in the national consciousness, that is, in the ideas and ideals which have guided the past development of our nation and which we set up as the goals of its future development.

I should deprecate the teaching of 'patriotism' in any formal sense in the study of American history. Rather, the child should be taught loyalty to the great ideals for which our nation has stood; patriotism will then take care of itself. Our whole national history should be presented to the child as a struggle to realize certain national ideals. The child should be taught to look upon American history as a movement to realize an ideal society founded upon ideas of liberty, justice, and brotherhood; to appreciate that the failure of our nation to realize these ideals would mean an irreparable loss to humanity as a whole; and finally to feel that on this account the great lesson for the individual to draw from American history is that he should consecrate himself and all of his powers to the realization of these ideals.

The study of human culture has shown us that all cultural and group life develops about certain 'pattern ideas.' These 'pattern ideas' in American history may be briefly summed as those of 'dem-

ocracy,' 'national unity,' 'material success,' 'social justice,' and 'the service of humanity.' The first three are found throughout our history; the last two have come to prominence within the past two or three generations, but were doubtless implied in the first three from the start. Democracy, in the sense of political democracy, or self-government, should be shown in the teaching of American history to be one of the earliest ideals for which the colonists and the fathers of our republic stood. In more recent times the effort has been to purify this democracy and make it practicable as a form of government in large and complex populations. To do this we have been gradually brought to realize the necessity of developing more complete democracy in our social relations and even in our industrial life.

From the early days of our Revolutionary War, national unity has been one of the 'pattern ideas' which our nation has sought to realize. To realize this idea the Civil War was fought, but not until the Spanish War did the sense of national unity come to pervade and dominate the whole nation. But during the present war it has again become manifest that we have not realized this ideal in its full measure, and our efforts are now being directed to inculcate like-mindedness, harmony, and fraternity among all elements of our population.

As soon as national unity was realized, the conquest and development of the material resources of our continent began to absorb the energies of the American people. At first, this energy was directed toward the settlement of the West and the opening up of agricultural and mineral sources of wealth. Later, mechanical invention was developed as a new method of harnessing natural forces and achieving material success. Still later, scientific and industrial education came to be emphasized as the means of attaining the highest national efficiency in material and economic lines.

This exploitation of the material and economic resources of the country was largely directed, at first, in an individualistic way, that is, to the end of 'private profit.' This led to the exploitation of class by class, and to social injustice. Hence arose the demand for social justice as between classes, which first manifested itself in our history in the consideration of the status of the negro slave.

A great part of the political history of the nineteenth century centered around the securing of social justice to the negro. Later, the securing of social justice to our working classes generally became, especially in the early years of the twentieth century, the dominant concern of our politics. This is perhaps still the chief note in our internal politics during the present war, and we now realize that social justice must extend even to the immigrant laborer among us.

Throughout our history, perhaps, there has been more or less of the ideal of service to humanity in our struggle to secure liberty, justice and fraternity; but this ideal became manifest only during the Spanish War, when altruistic motives led the majority of our people to favor intervention in Cuba. During the present World War the same ideal has led us finally to interfere in the struggle in Europe and to see that we cannot establish liberty, justice, and fraternity for ourselves unless we help to establish them also for all the nations of the world.

This outline is not offered in anything more than a tentative way, and only to illustrate the spirit in which I would wish to have American history taught in our public schools. It should be taught, in other words, so as to inculcate the ideals of good citizenship and to give insight into the social and political problems with which our nation has grappled from the beginning and with which it is still grappling. Of course, errors and blunders in our history should not be overlooked, as the child may often learn the lessons of good citizenship from these more effectively than from our successes as a nation. Our history should teach humility as well as loyalty and devotion to national ideals; it should be especially made to emphasize the necessity of greater intelligence and good will on the part of the citizen as he deals with the increasingly complex social, political, and economic problems of our national life. I should favor teaching history in general, therefore, from the 'problem' point of view, and the more concrete and 'up-to-date' the problem can be made for the child, the better. I should certainly not favor teaching our history as a sequence merely of important dates and events. Concerning the pedagogical details necessary to the working out of a practical course in American history taught from the above point of view, I do not feel competent to offer an opinion.

III

E. B. GREENE

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In any discussion of history in the general scheme of public education, we must face squarely an important difference in point of view between the historian as man of science and the educational administrator or public school teacher who is responsible for the training of young people for citizenship. The former is primarily concerned with the ascertaining and disseminating of accurate knowledge with regard to the subject matter of his science; the latter thinks first of the effect of this body of teaching upon the intellectual habits and outlook of the pupil. Does this difference of aim imply a difference of attitude so serious as to prevent coöperation between the two groups of workers? Has the scientific historian anything to offer to the man who is primarily concerned with the formation of a rational type of patriotism?

Most historical scholars have had misgivings about the association of history with patriotism. The so-called 'patriotic' teaching of history has too often nourished Chauvinism and developed the most extreme forms of national self-conceit. The possibilities for evil of this method have found in Prussian schools an *abschreckendes Beispiel* which is not likely soon to be forgotten. Against this sort of 'patriotic' history, the scientific historian has protested and must continue to protest with all his might—the more so because the ostrich habit of refusing to look the facts squarely in the face is scarcely less futile for the patriot than for the scholar. Some distortion or coloring of our vision by emotional factors of one kind or another can hardly be avoided, but let us get as near as we humanly can to seeing things as they really are and have been.

Undoubtedly, then, the association of patriotism with science in the teaching of history is beset with difficulties that are real and serious—so serious that many scholars take refuge in a kind of monastic detachment from the 'dust and heat' of contemporary

problems. Not all students of history, however, are satisfied with this "fugitive and cloistered virtue." For some of them at least, the perversion of historical material by misguided patriots is a danger to be guarded against, but not a sufficient reason for abandoning the field. They are not disposed to find in history hard and fast maxims applicable to all times and places; they realize the extreme complexity of any great historical event or movement and the futility of many analogies which seem plausible enough on the surface. But when all is said and done, they are ready to do what they can to make the facts of history, scientifically ascertained and sincerely interpreted, serve the uses of an intelligent patriotism. How this may be done is a problem requiring for its adequate discussion much more space than is here available, but a few suggestions are offered with some reference to the particular crisis through which we are passing.

It seems safe to say, first, that 'historical-mindedness' is in itself a valuable asset for the citizen and for the nation. We may define that attitude in various ways, but perhaps its most important element is the consciousness in the individual of his membership in a *continuing community*. The historically-minded person, young or old, is the one who feels his comradeship, not only with those who share with him the community life of the present, but scarcely less with those who in the past have built up the social fabric of which he is a part, and with those others, yet unborn, whose life must depend in some measure on what he and others like him are doing today. Something of that historical vision there must be in every citizen who, with a reasoned patriotism, deliberately gives up his individual life in defence of his country, and its ideals. Indeed, the strength of any nation must depend in large measure upon the proportion of its citizens who realize this essentially historical conception of their part in a continuing community as something more important than their individual fortunes. Here, surely, is common ground where history and patriotism may meet without disloyalty to the ideals of either.

In all this there is no question of twisting facts to bring out the virtues of a reigning dynasty, or a dominant party, or even of one's own country. Indeed, the rationally patriotic teacher of American history should be more concerned than any other to read

the record straight—to find in its failures and blunders, no less than in its successes and achievements, an infinite variety of suggestions for the problems of contemporary life. It happens, for instance, that we are now involved in war, a war radically different in many respects from any in which we have ever before been engaged; and yet it has already brought to the front certain fundamental issues which have been illustrated in our previous experience. We find ourselves almost irresistibly recurring to the experiences of Washington in the Revolution and of Lincoln in the Civil War for precedents to be followed or mistakes to be avoided. What has our experience shown as to efficient and inefficient ways of raising soldiers, as to sound and unsound methods of financing war, as to the variety of ways in which civilians, young and old, may help or hinder the national cause? It is not necessarily true that methods which proved mistaken in the past may not succeed under new conditions in the future; but experience is at least suggestive, as in the case of Washington's trials with the militia, or of paper money experiments in the Revolution and the Civil War, and may at least save us from a thoughtless stumbling into obvious pitfalls.

American biography should be dealt with in a similar spirit. The one-sided idealization of our historic leaders has often provoked modern writers to extreme reactions in the opposite direction. Even with young pupils it ought to be possible to show that great personalities like Franklin and Jefferson and Hamilton, are not to be explained by the simple formula of hero-worship, at the one extreme, or the scarcely less over-simple formula of economic determinism, at the other. The proper teaching of American history in the schools ought to help the young citizen to see that a really great leader may make unlucky mistakes, as Abraham Lincoln did when he appointed his first Secretary of War, or when he commissioned certain "political brigadiers;" that the hasty judgments of contemporaries may prove to be mistaken, as when in 1864 a large proportion of Lincoln's own political associates were convinced that his administration had been a failure. If teachers can set people to thinking along these lines, it will help to make them fairer, more discriminating critics of the men for whom they will have to vote.

One last suggestion is offered, with full appreciation of the difficulty of carrying it into effect. The events of the past few months are gradually convincing the American people that even our great Republic of the West is vitally concerned in the movements of the old world. As a matter of fact, our connection with Europe—the European element in American history—has always been much more important than the textbooks would lead us to suppose. The predominance of English speaking people in America was the result of a great conflict in which the genius of William Pitt and the armies of Frederick the Great were important factors. We owed our success in the struggle for independence in large part to the desire of France and Spain to restore what seemed to them a better political equilibrium in Europe, and more particularly, we owed it to our alliance with France. Our Declaration of Independence and our State constitutions with their insistence on government by “the consent of the governed” gave new courage to the radical thinkers of Europe and were among the many influences which inspired the great revolution in France. The Louisiana purchase and the Monroe doctrine, the declaration that America at least must be “made safe for democracy,” can not be understood without some notion of European history. The same is true of the great movements of immigration which have changed so radically the character of our population. It is equally true that the historic ideals of America cannot be fully appreciated without comparing them with those of a liberal parliamentary government like that of Great Britain or an intensely monarchical and aristocratic system like that of Prussia. In the face of our new international problems, the restricted outlook of our older teaching has become not only undesirable but dangerous.

IV

ALBERT BUSENELL HART

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How did American history come to be almost a universal study in the schools of the United States? It was the American Revolution which fired the imagination of the people and led to the writing of the earliest textbooks. They were based chiefly on the story of the colonial settlements, the virtue and prowess of the men of the Revolution, and the story of the American Indian. Later the War of 1812 and the Mexican War were added to the course of military glory and invariable victory, and then some of the political history became attached to this mainly military view of the things significant in the United States. The Civil War emphasized for the next generation the military side of our history. Not till about 1890 did school textbooks strive to awaken a major interest in the arts and events of peace.

Textbooks prepared upon such a basis no longer answer for the needs of the schools. Even in the midst of war the attention of the nation is directed to the resources, transportation, manufactures, finance, industries, and agriculture of the country; and to the problem of drawing out the man-power, woman-power and child-power of the nation. Problems of immigration, citizenship, labor, and social organization press upon every thinking mind. If the schools are to perform the task for which they are created, that of helping to put into children's minds a sense of the vital forces of the republic, and of how the people have worked out a society and government which make national existence possible, textbooks of history must deal with the things that have made the nation what it is.

To this end a history that is principally a reading book does not contribute the requisite structure: every school book ought to be as readable as the nature of the case allows, but anyone who has ever gone through such delightfully easy and readable books as Green's *English People* and Fiske's *Discovery of America* realizes

that a history may be fatally fluent when used by young people. A textbook of American history is for many children their only contact with the story of their own country, and the make-up must be such as to fix the attention. Devices of print, numbered sections, and indicated sub-divisions of sections, are a help to the learner and an aid to the teacher in the highly important task of ascertaining whether the child's mind has really appropriated the sense of the book.

The modern textbook ought to have a good outfit of pictures and maps. This is a picture age. Monthly, weekly, and daily papers overflow with pictures. A good part of popular education is absorbed from the 'movies;' but textbook illustrations ought to be largely of real things, which add clearness and life to the text. Maps are pedagogically still more important, for they are graphic means of telling important things in a parallel language. The proper use of accurate, well-distributed, and appropriate maps makes a clear addition to the text, and helps to build up in the child's mind a sort of skeleton map which will be serviceable throughout life.

The good textbook should recognize the fact that some schools have, and will use, additional historical material, and should therefore contain serviceable chapter bibliographies, condensed and carefully selected. Lists of topics or questions are a reasonable concession to the busy teacher who finds them an aid in class work. In fact every convenience that the textbook writer can introduce within the limits of his book goes toward augmenting the teaching power of the teacher.

The most serious question in textbooks of American history is their content: and every writer of such books discovers that he must leave out a great number of things which are interesting in themselves and helpful for an understanding of the progress of American history. In this process of rigorous and often painful selection, the writer ought to keep in his mind the following guiding ideas.

(1) The personal element must not be left out at any stage. Men like Franklin, Washington, Lincoln, Cleveland, are gifts to mankind; important not only for what they have said and done,

but also because they represent the highest reach and aim of their time.

(2) Military events and movements should be decreased to small compass. The really important thing in all wars is not the battles but the effort of the nation to rise to the crisis, to go through such tremendous experiences as are now upon the people of the United States.

(3) Politics and parties can be strung on a chronological wire, of which the supporting posts are the presidents and other recognized leaders; but party struggles, except so far as connected with questions which are still vital, are far less significant than other elements in the nation's history.

(4) The social life of America at various epochs is interesting in itself and serves to keep in mind the essential idea that American history in past times has been carried on by much the same kind of people as today.

(5) The history of the separate states is good each for its own community; but all school children should realize that the Union has been made up of geographic sections: New England, the Middle Colonies and States, the South, the West and the Far West. True history must keep account of the relations and the rivalries of these sections.

(6) The actual United States is not a region, but a group of a hundred million people. No history does its duty that does not bring out the race elements, the social organizations, the distribution of population, and especially the immigrants and re-emigrants.

(7) The economic life of the people is made up of the extraction of the fruits and the mineral bounties of the earth, and their combination into things useful for mankind; hence a school history must contain an account of the growth of knowledge and of processes, of new industries, of methods of transportation, of conservation of the gifts of nature.

(8) In the present world of enormous combinations of business and labor, it is imperative that even children should understand something of the increase of capital, the great aggregations of

wealth, and the means of keeping a balance between the interests of capital and labor.

To interweave these descriptive matters with the thread of consecutive history and the succession of events is a hard task; but he who cannot fit them together into some kind of unity, into a book which can be read with some pleasure and some advantage, and which will serve as the basis for classroom work, may as well abandon his pen, for that is what America is doing, and a knowledge of it is what the schools must have.

V

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The content of history for these grades should deal with great historical characters and with historical events. Emphasis should be distributed as follows: upon great characters for Grades IV and V, upon events for Grades VII and VIII, and about evenly divided for Grade VI.

The thing that most profoundly stimulates interest and character is the moral content of the individual's action. This moral or ethical side appears in the hero's struggle against obstacles and his victory over them, whether the difficulty be political, social, or economical. The story, whether oral or written, must set out these conflicts in a clear and sticking way. The son of the well-to-do will admire Lincoln's conflict with ignorance and poverty and his victory over them, while the son of the poor will catch hope from the results of this struggle. His battle with Douglas was almost entirely a political one, but the moral contrast displayed by the two men has great lessons. The struggle of Thomas Edison to achieve distinction is a fine illustration in the industrial field. His struggle against poverty when a newsboy and a wandering telegraph operator will stir sympathy, and his great achievements will stimulate endeavor.

These illustrations are given to show that present-day study of history is not all of war and politics. And while the number of stories dealing with purely economical characters should be increased, the danger is of plunging into a field which bears the title of popular clamor, but which falls far short of giving a great moral uplift to the pupil. Perhaps the result would not be so disastrous in the new field if our teachers were more thoroughly trained to do their work. This work may be worse than failure. If it is dry and uninspiring, it may result in creating a dislike for the subject.

The purpose of the fifth year is to give some notion of European history with particular emphasis on the beginnings of American

history. The pupil is now ten years old; for this reason and for the fact that he has given two years to the story of men and women who have done great things, he is able to take history in a more complex form. In this new phase he is able to look at history in which the great man is beginning to disappear; in which he is still a leader but only a leader. As he approaches the end of the fifth year, the leader merges himself into the action which we call an event.

In Grades VII and VIII the emphasis is upon the event—an action in which our leader may be one of many. The effort is to make the pupil see the action of people. If the teacher is skilled in her work, the pupil will be able to look upon the leading events of these two years as if he had been a part of them—as if he had participated in them.

This vividness may extend to industrial and economic as well as to political history. Here in these last years of the grammar school we have a wider range of events from which we can select. And there is no particular reason why they should not be chosen from industrial history so as to even up our once somewhat one-sided course.

The economic history is more abstract—especially in its financial aspects—than other historical facts. In order that the history may live and attract it should be concrete from start to finish.

VI

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1. The important and practicable specific aims of public school education for boys and girls from ten to fifteen years of age include, along with others relating to physical well-being, cultural development and moral training, several aims which have primarily in view good citizenship, in a somewhat restricted and therefore workable sense of that term. But at present very little of the direct instruction and training given to pupils of the ages indicated demonstrably functions as education for citizenship. We can readily assume that the discipline of the school, the personalities of teachers and principal, and the varied self-initiated group-activities of the pupils themselves, all contribute indirectly, or thru their educative by-products, to good citizenship. But only by vigorous use of the imagination can we assume that geography, grammar, literature, arithmetic, manual training, music, and the other school subjects as they are now taught, make appreciable contributions to the qualities (specific habits and habitual attitudes, appreciations, varieties of insight and understanding, ideals, active motives) that we should easily identify as characteristic of 'good citizenship.'

It has been commonly taken for granted that some 'knowledge' of American history is essential to good citizenship; and, as a result, American history, as a 'subject of study' for children from 10 to 15 years of age, has attained a large place in elementary school curriculums. The 'content' of the subject, as commonly taught, is quite accurately exhibited in the textbooks generally used. This content, for Grades four to six, is usually made up of easy narrative, story materials, and biographies. For Grades seven and eight it consists of very condensed statements of detailed fact and generalization, presented in rigid chronological order, and with substantially no cross reference to contemporary conditions and problems.

2. It is submitted that any serious attempt to evaluate the results of the teaching of this American history by all but a bare

fraction of teachers (one in a thousand having native genius sufficient to reorganize the subject in process of teaching it) will result in the conviction that such teaching has no substantial functional value for the rank and file of pupils (exception must again be made for the rare genius) in laying foundations of good citizenship as these may be expressed in terms of habit, appreciation, understanding, ideal, or motive. This failure may be ascribed to many causes: To emphasis on political and military history sufficient to exclude those topics and considerations which are of most concern to the average citizen; to multiplication of highly digested statements of data and conclusions, irrespective of their interest or pertinency; and to inclusion and elaboration of topics with no reference to their bearing on civic problems of the present or future. But most of all must it be ascribed to the probable impossibility, under any circumstances, of using the materials of history, when organized on the bases approved by the historian, as useful means of civic education. History, for the purposes of the historian (and perhaps also the purposes of the student pursuing it from cultural motives) must be organized largely on a chronological basis; the inclusion of topics and emphasis thereon must be determined largely by their significance to the societies of the past times in which the events occurred; and the 'unity' of the subject (as alleged, but of course hardly ever realized in textbooks) must be preserved.

But the 'problems' of the citizen are of today or tomorrow; and when in the case of any problem, historical perspective is essential to its understanding, the importance of the strand of history, rapidly tapering to a point in the past, which is required for the purposes of such perspective usually bears no relation to its importance in historians' history. For example, the struggle of the French and the English for possession of large portions of North America necessarily looms large to the historian; but rarely, and then only incidentally, does it affect understanding of contemporary problems of citizenship. Conversely, problems of transportation of commodities, which in a hundred ways confront and baffle all good citizens today, have practically no history that is illuminating and suggestive back of 1840. Examples could be multiplied.

3. As a basis for discussion, the thesis is here submitted that American history, as commonly organized, should be employed in

the civic education of youths 10 to 15 years of age, primarily as reference material only. It should not be *studied*—that is analyzed intensively, interpreted, and memorized—except in just sufficient measure to make the use of its materials for reference purposes easy and effective. Probably the equivalent of twenty hours study in each grade from the fourth to eighth would be sufficient for these purposes.

The time and energy now given to the study of history should hereafter be devoted to a study of those topics which obviously have contemporary and future significance for citizenship, and, where it is evident that the events and ideas of the past can, for the learners under consideration, contribute to understanding of these problems and to the formation of ideals, the historical materials should be made accessible and, to the extent necessary, studied. In the case of almost any topic meeting the conditions here suggested, it will be evident, of course, that only certain aspects or elements can profitably be studied by pupils of stated degrees of development. For example, the immigration, education, and assimilation of non-English-speaking foreigners to this country embraces many problems of the utmost significance to all citizens. Some of the phases of these problems can readily be grasped by pupils of ten years of age whose parents were themselves immigrants or who have been closely associated with immigrants. Other phases of these problems, including much of the interesting history of immigration in the 17th, 18th, and 19th centuries (and also of Flemish migrators into England, of barbarian into the Roman empire, and even of earlier legendary migrations) can well be apprehended by pupils of the seventh and eighth grades.

The perennially strained relations of labor and capital, the 'cleaning up' of cities, the further development of agriculture, the stabilizing of our public fiscal affairs, the occupation and development of public lands, mines, and water-power opportunities, the improvement of transportation, the development of right international relationships, the further evolution of suffrage and right methods of voting, the regulation of business in vice-producing commodities like alcoholic beverages—all these and a hundred other similar topics in their non-partisan aspects are certainly no more difficult than the topics which pupils are forced to study as Amer-

ican history—and certainly many times more profitable as preparation for intelligent citizenship. . .

Some, devoid of sense of humor or of the sweet wisdom of practical experience, will still murmur “But how can youths understand these questions if they do not know history?” Would these critics insist that before youth can partly appreciate and partly understand the “flower in the crannied wall” it must first understand “what God and man is?”

VII

(By a Contributor Who Wished to Have His Name Withheld)

I am impressed with the fact that altogether too much attention is paid to the separate historical development of a separate country, and too little attention paid to the events which, at the same time, transpired in others, which have had a determining influence on the one country whose history is being studied. In my experience in active life, I have found a few men particularly well equipped—intellectually—who had been given, in school, a picture of what had occurred at a given period in all European countries, for instance. They knew how to place prominent persons and facts in their relation to one another, had a clear impression of what influences had been active in countries adjoining each other, and knew thereby the essential features of history much better than others who had been taught by the usual method. I must confess that I have met few who had had the benefit of what seemed to me the preferable method, but the impression made on my mind must have been so much the more emphatic; it has clung to me for years.

I think too, that while nationalistic teaching of history is to a certain degree necessary and desirable, children should be taught that above all consideration for one's own country, there is the obligation to direct public policy and acts according to "a decent respect to the opinions of mankind," and that this consideration should supersede all self-interest, under all circumstances. It should, in my opinion, be pointed out as the theory which permits full and free action of separate political units, without requiring "internationalism" as a safety valve.

SUMMARY

W. C. BAGLEY

From these discussions it seems safe to infer that the most significant weakness of history as now taught and studied in the elementary school is the narrowness of its scope and content. Our sudden transition from the position of a sequestered and perhaps somewhat self-satisfied nation to a position that in many ways lays upon our people the responsibilities of a world-leadership indicates clearly the need of an understanding of our national development in the light of preceding and parallel movements in Europe.

At the same time, the contributors to this symposium are apparently in agreement that elementary history has still an important function to discharge in the development of a *true* patriotism. But the qualifying adjective is important. The care with which they have formulated the conception of patriotism testifies to their belief that the older conceptions need some measure of reconstruction. Certainly that kind of patriotism that can be nourished only on deliberate misstatements and misinterpretations of historical facts is not the kind that a great democracy can afford to cultivate.

Especially important in this connection is the wholly admirable suggestion that the teaching of national history should develop not only a national *consciousness*, but also a national *conscience*—a collective sensitiveness to dishonor in international relationships comparable in every essential way with the sensitiveness to dishonor in personal relationships which constitutes the backbone of individual morality. It is the lack of this national 'conscience' in our present enemy that disgusts and repels us when we contemplate his atrocities, and one of the first points of agreement in the coming federation of nations might well be an insistence that every nation through the instruction in history offered in its lower schools should take steps to develop this collective conscience. As some of these writers clearly point out, this is not an impossible function for the teaching and study of history to fulfill.

Closely related to this, and particularly important in a democracy, is the suggestion that history, if taught aright, can make the

future citizen a "fairer and more discriminating critic of the men for whom he will vote." Indeed, when we think of the responsibilities that the American people must assume in the new world order, it is hard to overestimate the fundamental importance of this aim in the teaching of history. A democracy must have its leaders, but the very essence of democracy lies in the fact that this leadership must be constantly subject to evaluation by all of the people. Certainly no school subject is so well adapted as is history to develop upon a broad scale this discriminating attitude of mind through which alone the perils of cheap politics and demagoguery may be avoided.

It is apparent, too, that there is need for a broader aim for historical instruction than is indicated by the older implications of the formula, "Training for citizenship." The citizen is more than a voter, as practically all of our writers insist. There is need for an understanding and appreciation, not only of our political development, but also of our industrial and economic development, and there are present problems and clearly predictable future problems in the solution of which the perspectives and backgrounds which historical study alone can furnish may be and should be determining factors. While the conviction of one of the writers that the study of history in the elementary school may best be comprised in a series of references suggested by the study of present and future problems represents an extreme position, there can be no controversy over the importance of making a much larger use of the 'problem' than we do now, and of training even the elementary pupil to search for causes and to view present problems in the light of their genesis. This, we take it, is the essence of that "historical-mindedness" which is listed as one of the desirable outcomes of historical study.

Every discussion of aims and values in the teaching of history reveals a serious handicap under which the teacher of this subject must do his work. We refer to the difficulty of formulating the outcomes of teaching in a way that clearly suggests both a method of procedure that will insure these outcomes and a reliable test of the efficiency of the teaching. The teacher of elementary arithmetic, by way of contrast, can define the desired outcomes of his subject in terms very largely of skill, and likewise the teachers of writ-

ing, spelling, oral and written composition, and the beginners' courses in foreign languages. But skill in this narrower sense is certainly not what the teacher of history is seeking to develop. It will be noted that our contributors use two groups of words in defining their aims. One group includes such terms as loyalty, patriotism, good citizenship, unity, brotherhood, justice, fairness, and the like. The other group comprises such words as habitual attitudes, interests, appreciations, insight, understanding, historical-mindedness, pattern-ideas, motives, and ideals. The words of the first group represent complex sociological virtues which are usually considered objectively. The words of the second group refer to things psychological, subjective, to mental states or processes. It is clear that the more remote objectives in the study of elementary history must be formulated in terms of the former group; but what the teacher must do is to insure the immediate, subjective outcomes which in right combination will spell those more complex, sociological virtues.

The continual recurrence of the terms "ideals," "appreciations," and "attitudes," and especially the care with which one of the writers has constructed a list of the specific ideals which should emanate from the study of elementary history and the urgency with which another protests against traditional methods of instruction as utterly inadequate to engender these outcomes, suggests the importance of a clearer understanding of what these apparently important things really are and how the processes of education may be turned toward their development. Concerning the objectives of historical teaching there seems to be little disagreement; upon the materials, too, there is substantial harmony; but between the objectives and the materials there is a veriable *terra incognita*.

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CONSTITUTION OF THE NATIONAL SOCIETY FOR THE STUDY OF
EDUCATION

ARTICLE I

Name.—The name of this Society shall be “National Society for the Study of Education.”

ARTICLE II

Object.—Its purposes are to carry on the investigation and to promote the discussion of educational problems.

ARTICLE III

Membership.—SECTION 1. There shall be three classes of members—active, associate, and honorary.

SEC. 2. Any person who is desirous of promoting the purposes of this Society is eligible to active membership and shall become a member on approval of the Executive Committee.

SEC. 3. Active members shall be entitled to hold office, to vote, and to participate in discussion.

SEC. 4. Associate members shall receive the publications of the Society, and may attend its meetings, but shall not be entitled to hold office, or to vote, or to take part in the discussion.

SEC. 5. Honorary members shall be entitled to all the privileges of active members, with the exception of voting and holding office, and shall be exempt from the payment of dues.

A person may be elected to honorary membership by vote of the Society on nomination by the Executive Committee.

SEC. 6. The names of the active and honorary members shall be printed in the *Yearbook*.

SEC. 7. The annual dues for active members shall be \$2.00 and for associate members \$1.00.

ARTICLE IV

Officers and Committees.—SECTION 1. The officers of this Society shall be a president, a vice-president, a secretary-treasurer, an executive committee, and a board of trustees.

SEC. 2. The Executive Committee shall consist of the president and four other members of the Society.

SEC. 3. The president and vice-president shall serve for a term of one year, the secretary-treasurer for a term of three years. The other members of the Executive Committee shall serve for four years, one to be elected by the Society each year.

SEC. 4. The Executive Committee shall have general charge of the work of the Society, shall appoint the secretary-treasurer, and may, at its discretion, appoint an editor of the *Yearbook*.

SEC. 5. A board of trustees consisting of three members shall be elected by the Society for a term of three years; one to be elected each year.

The Board of Trustees shall be the custodian of the property of the Society, shall have power to make contracts, and shall audit all accounts of the Society, and make an annual financial report.

SEC. 6. The method of electing officers shall be determined by the Society.

ARTICLE V

Publications.—The Society shall publish *The Yearbook of the National Society for the Study of Education* and such supplements as the Executive Committee may provide for.

ARTICLE VI

Meetings.—The Society shall hold its annual meetings at the time and place of the Department of Superintendence of the National Education Association. Other meetings may be held when authorized by the Society or by the Executive Committee.

ARTICLE VII

Amendments.—This constitution may be amended at any annual meeting by a vote of two-thirds of voting members present.

MINUTES OF THE MEETING
of the
NATIONAL SOCIETY FOR THE STUDY OF EDUCATION
AT KANSAS CITY, MISSOURI

MONDAY EVENING, FEBRUARY 26, 1917

More than a thousand persons assembled in the Grand Avenue Temple to hear the discussion of the *Sixteenth Yearbook* of the Society. President Chadsey called the meeting to order and presided during the following program of addresses:

Progress in the Study of Economy of Time.

H. B. WILSON, Superintendent of Schools, Topeka, Kansas.

Some Contributions to School Practice That We May Expect From Time Economy.

R. G. JONES, Superintendent of Schools, Rockford, Ill.

A Critical Estimate of the Methods Employed in Determining Minimal Essentials.

L. D. COFFMAN, Dean College of Education, University of Minnesota, Minneapolis, Minn.

Economy and Efficiency in Science Teaching.

O. W. CALDWELL, University of Chicago, Chicago, Ill.

Use of the Syllabus as a Supervisory Instrument to Promote Effective Training.

E. HORN, University of Iowa, Iowa City, Iowa.

Minimal Essentials in the Training of Teachers.

W. C. BAGLEY, Director School of Education, University of Illinois, Urbana, Ill.

After some discussion a brief business meeting of the Society was held.

On recommendation of the Executive Committee and Board of Trustees, it was voted that the first sentence of Article IV, Section 3, of the Constitution be amended to read as follows: "The

president and vice-president shall serve for a term of one year, the secretary-treasurer for a term of three years."

It was voted to endorse the following resolution of the Executive Committee: "The National Society for the Study of Education will welcome the opportunity to enjoy the benefits of affiliation with the American Association for the Advancement of Science provided this privilege can be extended to all persons who are members of the Society during the year 1917." The Executive Committee reported that it was considering the feasibility of arranging a joint program with Section L of the American Association in 1918.

The President announced that the Executive Committee had reappointed G. M. Whipple as Secretary-Treasurer of the Society for a term of three years. The report of nominations presented by the Executive Committee and Board of Trustees was heard and the persons cited were elected, as follows:

For President

LOTUS D. COFFMAN

Dean, College of Education, University of Minnesota

For Vice-President

J. A. C. CHANDLER

Superintendent of Schools, Richmond, Virginia

For Trustee (to serve three years)

GEORGE MELCHER

Director Bureau of Research and Efficiency, Kansas City, Missouri

For Member of Executive Committee (to serve four years)

ERNEST HORN

Associate Professor of Education, University of Iowa

CHARLES E. CHADSEY, *President*

GUY M. WHIPPLE, *Secretary*

FINANCIAL REPORT OF THE SECRETARY-TREASURER OF THE
NATIONAL SOCIETY FOR THE STUDY OF EDUCATION

JANUARY 1, 1917 TO DECEMBER 31, 1917, INCLUSIVE

RECEIPTS FOR 1917

Balance on hand December 31, 1916.....		\$2320.13
From sale of <i>Yearbooks</i> by the University of Chicago Press, and the Public School Publishing Company:		
June to December, 1916.....	\$ 610.86	
January to June, 1917.....	1242.62	\$1853.48
Interest on savings bank account:		
To January 1, 1917.....	\$ 28.62	
To July 1, 1917.....	18.11	\$ 46.73
Dues from 882 members (current and delinquent)		\$1109.25
Total income for the year.....		\$3009.46
Total receipts, including initial balance.....		\$5329.59

EXPENDITURES FOR 1917

Publishing and distributing Yearbooks:

Printing 1200 <i>15th Yearbook, Pt. III</i> ("Junior High School")	\$ 361.96
Printing 1300 additional <i>15th Yearbook, Pt. III</i>	63.96
Paper, alterations, stereo matrices and zines for <i>15th Yearbook, Pt. III</i>	277.67
Printing 1200 copies <i>16th Yearbook, Pt. I</i> ("Second Report Economy Time").....	575.01
Printing 1800 additional <i>16th Yearbook, Pt. I</i>	114.48
Paper, alterations, stereo matrices and zines for <i>16th Yearbook, Pt. I</i>	420.68
Distributing <i>15th Yearbook, Pt. III</i> and <i>16th Yearbook, Pt. I</i> (sent together).....	111.15
Printing 500 additional <i>6th Yearbook, Pt. II</i> ("Kindergarten")	87.92
Printing 750 additional <i>9th Yearbook, Pt. I</i> ("Health and Education")	95.24
Printing 500 additional <i>10th Yearbook, Pt. I</i> ("City School as Community Center").....	56.06
Printing 750 additional <i>10th Yearbook, Pt. II</i> ("Rural School as Community Center").....	63.85
Printing 750 additional <i>13th Yearbook, Pt. II</i> ("Organizing School Surveys")	77.07
Printing 1200 <i>16th Yearbook, Pt. II</i> ("Size of High School and College Efficiency").....	277.82
Carried forward	\$2,582.87

<i>Brought forward</i>		\$2,582.87
Paper, alterations, stereo matrices and zincs for <i>16th Yearbook, Pt. II.</i>	140.59	
Printing 300 additional <i>16th Yearbook, Pt. II.</i>	28.76	
Distributing <i>16th Yearbook, Part II.</i>	50.70	
Distributing <i>16th Yearbook, Pt. I</i> (since March 1, 1917)	18.40	
Packing, cartage, freight, transferring <i>Yearbooks</i> and other materials from Chicago Press to Public School Publishing Company . . .	56.29	
Premium on fire insurance (\$5,000)	13.75	
		<hr/>
Total cost of <i>Yearbooks</i>		\$2891.36

Secretary's Office:

Secretary's salary from end of Detroit meeting, February, 1916, to end of Kansas City meeting, February, 1917	\$ 100.00	
Secretary's traveling and hotel expenses for Kansas City meeting	55.93	
Bookkeeping and typewriting	72.75	
Other clerical assistance	17.50	
Stamps	56.80	
Stationery	36.00	
Telegrams	1.78	
		<hr/>
Total for Secretary's office		\$ 340.76
		<hr/>
Total expenses		\$3232.12

SUMMARY

Total expenditures for 1917		\$3232.12
Balance on hand December 31, 1917: } Savings account...		2000.00
	} Checking account..	97.47
		<hr/>
Total		\$5329.59

MEMBERSHIP

Number of active members (including three honorary) December 31, 1917	280
Number of associate members December 31, 1917	602
	<hr/>
Total membership	882

GUY M. WHIPPLE, *Secretary-Treasurer.*

BOUND VOLUMES
OF
THE YEARBOOKS OF THE SOCIETY
I-XXIX

The yearbooks of the National Society for the Study of Education form the outstanding feature of its activities. In the earlier days of the Society these publications were comparatively small in size, though not in importance of their topics or in authoritative-ness of their producers. From the first, the policy was adopted of issuing the yearbooks in advance of the meeting at which they were to be discussed. As long as the membership of the Society was limited to a small group of active participants, the annual meetings were perhaps of even more importance than the printed material which formed the subject matter for discussion. But as the Society's membership increased and as the number of non-members attracted to its meetings also increased, the difficulty of holding these intimate discussions likewise increased, the meetings gradually shifted in character, so that the formal presentation of addresses came to assume more, and the discussions less importance—a change which many members deplored, but which it has seemed impossible to avoid. At the same time, the commercial sales of yearbooks not distributed to members in return for their dues correspondingly increased and gradually affected the functions of the Society in ways that could hardly have been foreseen at the outset. More particularly, the financial returns from the sales of its yearbooks have produced for the Society a source of income which has increased like the proverbial snowball, and which has brought it about that the Society is to-day in some respects more nearly a publishing society than a society for the holding of meetings and discussion of educational topics. In other words, the production and distribution of its yearbooks, rather than the holding of its annual meetings, has come to be the chief method by which the Society is now influencing the trend of educational thinking and practice. As will be seen by a glance at the statements given in the annual reports of the Secretary, the sums now available to the Society from the sale of its yearbooks have reached very considerable proportions. The policy of the officers of the Society has been consistently to return these profits to the members of the Society,

partly by issuing yearbooks that often cost most to deliver to its members than the dues received in return, partly by subsidizing more effectively the work of the various committees that are at work upon the production of forthcoming yearbooks.

All in all, then, the yearbooks of the National Society for the Study of Education are in many respects a feature unique among educational organizations. As to their intrinsic worth as educational documents, there need be no argument; their ready sale, the repeated requests for permission to quote from their pages, and the numerous enthusiastic unsolicited endorsements from our members are sufficient testimony.

SUMMARY OF YEARBOOKS I-XXIX

The following is a list of the fifty-six books published to date (1930) together with the names of the contributors and a brief synopsis of the contents of each book. Perusal of this summary will show the scope and importance of the Society's publications.

VOLUME ONE

THE FIRST YEARBOOK, PART I (1902)

SOME PRINCIPLES IN THE TEACHING OF HISTORY

Lucy M. Salmon

This first yearbook of the Society is a concise and stimulating discussion of the principles underlying the teaching of history. The author devotes various sections of the paper to a discussion of the place of the sources in the school course, the historian in relation to the selection of materials, the relation of history to other subjects, and changes in the methods of teaching it. The concluding section gives an outline of the history recommended for use in the twelve grades.

THE FIRST YEARBOOK, PART II (1902)

THE PROGRESS OF GEOGRAPHY IN THE SCHOOLS

W. M. Davis and H. M. Wilson

Some of the best principles which govern the teaching of geography to-day are set forth in this early yearbook of the Society. Mr. Davis, the author of the major portion of the volume, deplors the deficiency of higher learning in the field, urges better training of teachers in the subject matter, stresses the need of subordinating detailed items to general principles, points out the importance of showing causal relations in teaching the subject, and advocates better and more extensive use of equipment of geographical laboratories. Some space is devoted to a discussion of ontography, systematic and regional physi-

ography, and systematic and regional geography, with brief reference to their places in the curriculum. The concluding chapter, by Mr. Wilson, discusses the relation of geography to the sciences.

THE SECOND YEARBOOK, PART I (1903)

THE COURSE OF STUDY IN HISTORY IN THE COMMON SCHOOLS

Isabel Lawrence, Charles A. McMurry, Frauk McMurry,
Edward C. Page, and Emily J. Rice

The major portion of this yearbook is devoted to a course of study in history for grades three to eight inclusive, prepared by Charles A. McMurry. Particular recognition is given to the intimate relation between history and reading and geography. A brief course in geography is outlined for use with the subject matter in history and reading. The final chapters of the volume are a series of interesting papers discussing Miss Salmon's presentation of the principles of teaching history, which appeared as Part I of the First Yearbook.

THE SECOND YEARBOOK, PART II (1903)

THE RELATION OF THEORY TO PRACTICE IN EDUCATION

David Felmley, Manfred J. Holmes, John A. Keith, and Levi Seeley

Under the chairmanship of John A. Keith, a committee of the Society undertook a careful study of the relation of theory to practice in education in (a) universities, (b) normal schools, and (c) city training schools. The plans of the committee embraced a historical account of earlier procedure in each of these types of institutions, an account of contemporary procedure, an investigation of the most effective relation of theory to practice under various forms of institutional organization, and a study of the relative values and essentials of some nine fields of subject matter offered in those institutions. This yearbook is devoted largely to the Committee's report on the situation in the normal schools.

THE THIRD YEARBOOK, PART I (1904)

THE RELATION OF THEORY TO PRACTICE IN THE EDUCATION OF TEACHERS

Sarah C. Brooks, John Dewey, C. H. Farnsworth, F. M. McMurry,
G. R. Richards, D. E. Smith, and T. D. Wood

This yearbook consists of three sections: (1) a paper by John Dewey, entitled "The Relation of Theory to Practice in Education," (2) further treatment of the same topic in a paper by Sarah C. Brooks, and (3) a description of the "Theory and Practice at Teachers College, Columbia University" by the remaining contributors. The secretary's report, referring to the meeting at which this yearbook was discussed, states: "The entire time was devoted to the discussion of Dr. John Dewey's paper. . . . This paper stirred up a good deal of vigorous thinking and provoked a great deal of highly valuable discussion." Dr. Dewey pointed out the artificiality of the conditions under which so-called practice is secured in those situations where young teachers gain

their experience by taking immediate control of a room under the observation of a superior supervisory officer. As a substitute for this method, he proposed that while the student was acquiring his knowledge of subject matter, theory, and principles, he should devote long periods to the observation of both skilled teachers and children at work in the classroom. This was to be followed by an assistantship to the teacher, which should lead gradually to experience in actual teaching.

THE THIRD YEARBOOK, PART II (1904)

NATURE STUDY

Wilbur S. Jackman

The author of this yearbook has three objects in mind: to show (1) that nature study must be presented in accordance with the general principles of psychology which apply to all other subjects; (2) that it is necessary to start with broad, general views or pictures of nature and proceed gradually to the details; and (3) that nature study forms but a part of education, since its relationships reach into all other subjects which go to make up the whole. He suggests salient centers of subject matter and points out principles of method, carrying through the whole a due regard for the needs of the young and growing mind. The book is illustrated and contains a suggestive course of study.

THE FOURTH YEARBOOK, PART I (1905)

THE EDUCATION AND TRAINING OF SECONDARY TEACHERS

S. D. Brooks, J. F. Brown, J. S. Brown, C. DeGarmo, E. G. Dexter, E. C. Elliott, C. B. Gilbert, G. S. Hall, R. P. Halleck, M. J. Holmes, E. J. James, L. H. Jones, L. C. Lord, A. F. Nightingale, M. V. O'Shea, H. H. Seerley, C. C. Van Liew, and J. N. Wilkinson

The two central problems of this yearbook are: (1) What constitutes the ideal secondary teacher?; and (2) By what selective process and preparation can the realization of this ideal be promoted? These problems are considered under five divisions: (1) an historical sketch, which seeks to trace briefly the genesis of secondary schools in their relation to the life of the people; (2) a presentation of the opinions of five experienced secondary-school men as to what constitutes the ideal secondary-school teacher; (3) an examination of the status and personnel of secondary teachers in the United States; (4) a survey of the provisions for the preparation of secondary-school teachers made by universities, normal schools, and colleges; and (5) a consensus of opinion as to the relative advantages and limitations of universities and normal schools in preparing secondary-school teachers.

THE FOURTH YEARBOOK, PART II (1905)

THE PLACE OF VOCATIONAL SUBJECTS IN THE HIGH-SCHOOL CURRICULUM

J. Stanley Brown, Gilbert B. Morrison, and Ellen H. Richards

Three main groups of vocational studies have been treated in this yearbook: commercial work, manual training, and domestic science. These topics

are discussed in relation to their then present status, and their possibilities for future development. The concluding chapters of the book are devoted to a discussion of Part I of the Fourth Yearbook.

VOLUME TWO

THE FIFTH YEARBOOK, PART I (1906)

ON THE TEACHING OF ENGLISH IN ELEMENTARY AND HIGH SCHOOLS

George P. Brown and Emerson Davis

This yearbook opens with a theoretical dissertation on what Mr. Brown considers the philosophical background for the efficient teaching of English. From this he proceeds to a more practical discussion of methods of teaching English in the primary and grammar grades and in the high school. The latter part of the book describes the course of study in English in the primary grades of the public schools of Cleveland.

THE FIFTH YEARBOOK, PART II (1906)

THE CERTIFICATION OF TEACHERS

Ellwood P. Cubberley

This yearbook sets forth in some detail the conditions prevailing in 1906 with reference to the certification of teachers, traces the development of certain tendencies relating to the problem, and offers suggestions as to lines along which improvement might be made.

THE SIXTH YEARBOOK, PART I (1907)

VOCATIONAL STUDIES FOR COLLEGE ENTRANCE

W. J. S. Bryan, C. A. Herrick, H. W. Holmes, T. de Laguna, and
V. Prettyman

Continuing the discussion begun in Part II of the Fourth Yearbook, this yearbook takes up those aspects of vocational subjects relating to college entrance.

THE SIXTH YEARBOOK, PART II (1907)

THE KINDERGARTEN AND ITS RELATION TO ELEMENTARY EDUCATION

Ada Van Stone Harris, Patty S. Hill, E. A. Kirkpatrick, Maria Krause-Boelté,
Harriette M. Mills, and Nina C. Vandewalker

This yearbook is devoted to an investigation of the relation between the kindergarten and elementary school. It was undertaken in order to further the effort to establish the kindergarten more firmly as a part of the public-school system by bridging the chasm which existed between it and the primary grades. It contains a résumé of Froebelian principles, a presentation of both the conservative and the progressive phases of kindergarten education, the history of kindergarten influence in elementary education, and a discussion of the evolution of the kindergarten program.

THE SEVENTH YEARBOOK, PART I (1908)

THE RELATION OF SUPERINTENDENTS AND PRINCIPALS TO THE TRAINING AND PROFESSIONAL IMPROVEMENT OF THEIR TEACHERS

Charles D. Lowry

This yearbook is largely a summary of replies to a questionnaire sent to members of the Society and others, asking (1) for opinions as to the need for carrying on systematic work for training the teaching force to a higher degree of efficiency, and (2) for statements of the nature of such work in those schools in which it was carried on. The replies pointed to the conclusion that the greatest essential for a teacher's life and growth is vigorous, systematic study, preferably in courses under the direction of higher institutions of learning. Various plans for attaining this result are presented in this volume.

THE SEVENTH YEARBOOK, PART II (1908)

THE COÖRDINATION OF THE KINDERGARTEN AND THE ELEMENTARY SCHOOL

Margaret Giddings, B. C. Gregory, Jennie B. Merrill, and Bertha Payne

“Supplement to Sixth Yearbook, Part II” is the secondary title of this yearbook. Following the somewhat theoretical discussion of the problem set forth in the earlier yearbook, this one attacks the more practical consideration of how to coördinate the work of the kindergarten and the school. It discusses ways and means of securing organic continuity between the two, shows how the right training of teachers may further the work of coördination, and sets forth the relation of supervision to the question at issue.

THE EIGHTH YEARBOOK, PART I (1909)

EDUCATION WITH REFERENCE TO SEX: PATHOLOGICAL, ECONOMIC, AND SOCIAL ASPECTS

Charles Richmond Henderson

THE EIGHTH YEARBOOK, PART II (1909)

EDUCATION WITH REFERENCE TO SEX: AGENCIES AND METHODS

Charles Richmond Henderson and Helen C. Putnam

The two parts of the Eighth Yearbook are meant to be considered as a single study. In Part I of the study evidence, drawn from the testimonies and experiences of well-known physicians and social hygienists, is offered to reveal the urgent need for instructing youth in sex hygiene. Part II gives practical suggestions to parents and teachers regarding formal instruction in matters of sex. The study concludes with a helpful paper by Dr. Putnam, entitled “Sex Instruction in the Schools,” which is devoted chiefly to showing how this instruction may be presented in the school naturally and wholesomely in connection with biology.

VOLUME THREE

THE NINTH YEARBOOK, PART I (1910)

HEALTH AND EDUCATION

Thomas Denison Wood

A brief synopsis is given in this yearbook of the different phases of educational administration, supervision, and instruction which have to do with health. It treats of health examinations, school sanitation, the hygiene of instruction, health instruction, and physical education. A helpful bibliography concludes the volume.

THE NINTH YEARBOOK, PART II (1910)

THE NURSE IN EDUCATION

M. Adeline Nutting, Mary L. Read, Isabel M. Stewart, and Thomas D. Wood

Supplementing the discussion in Part I, this volume is devoted to the rôle in education of the professionally trained nurse. It presents some of the important results attained in this field, outlines the scope and possibilities of the work, suggests the relationship of the nurse to the community, and indicates the coördination of the nurse's work with that of parent, regular teacher, school physician, teacher of physical education, and other special teachers whose particular subjects bring them into relation with the health side of education.

THE TENTH YEARBOOK, PART I (1911)

THE CITY SCHOOL AS A COMMUNITY CENTER

C. W. Crampton, Mrs. E. C. Grice, Mrs. S. E. Hyre, H. C. Leipziger,
C. A. Perry, E. W. Stitt, E. J. Ward, and R. D. Warden

The contributors to this volume have described in a concrete way the extent and character of experiments carried on under their direction for making the school a community center. They include in their discussion methods employed, results secured, concrete incidents, difficulties, criticisms, and suggestions encountered in their experiments, together with comparisons of similar work conducted in other communities.

THE TENTH YEARBOOK, PART II (1911)

THE RURAL SCHOOL AS A COMMUNITY CENTER

E. C. Bishop, B. H. Crocheron, B. M. Davis, Jessie Field, A. B. Graham,
F. W. Howe, O. J. Kern, and M. T. Scudder

This volume supplements Part I, and treats in a similar manner the problems and considerations involved in making the rural school a community center. It concludes with a bibliography on city and rural schools as social centers.

THE ELEVENTH YEARBOOK, PART I (1912)

INDUSTRIAL EDUCATION: TYPICAL EXPERIMENTS DESCRIBED AND INTERPRETED

J. F. Barker, M. Bloomfield, B. W. Johnson, P. Johnston, L. M. Leavitt,
G. A. Mirick, M. W. Murray, C. F. Perry, A. L. Safford,
and H. B. Wilson

In this yearbook an attempt is made to bring together accounts of actual progress made in organizing schools for industrial education, to interpret the various lines of experimentation undertaken, and to demonstrate practical possibilities. Each contributor was requested to describe the history, organization, and results of industrial education in his school, to compare his with other schools of the same type, and to show how his particular type of undertaking might contribute toward the whole problem of industrial education. (See the Twenty-Third Yearbook, Part II, for further treatment of this topic.)

THE ELEVENTH YEARBOOK, PART II (1912)

AGRICULTURAL EDUCATION IN SECONDARY SCHOOLS

H. F. Button, F. R. Crance, D. J. Crosby, W. H. French, W. R. Hart,
A. C. Monahan, R. W. Stimson, and G. F. Warren

The aim of this yearbook was to present accounts of what was actually being done in secondary agricultural training in various parts of the United States at the time it was prepared. It represents an analysis of the typical experiments which were under way at that time, and gives some interpretation of each plan and its results.

THE TWELFTH YEARBOOK, PART I (1913)

THE SUPERVISION OF CITY SCHOOLS

Franklin Bobbitt, John W. Hall, and J. D. Wolcott

Professor Bobbitt, who contributes the major portion of this yearbook, treats the question of supervision under seven main heads, the most important of which are: the need for definite standards of achievement (with special reference to achievement tests); the necessity of determining under actual conditions the most efficient methods for actual service, and then insisting upon them; the importance of standard qualifications for teachers, with some account of a rating scale; the need for standard preliminary training of teachers; the need for training during service; and the importance of defining for teachers the extent, standards, and methods of work that are expected. The appendix, by Professor Hall, gives an account of the supervision of beginning teachers in Cincinnati. Mr. Wolcott contributes a bibliography on city-school supervision.

THE TWELFTH YEARBOOK, PART II (1913)

THE SUPERVISION OF RURAL SCHOOLS

A. S. Cook, J. Davis, L. J. Hanifan, U. J. Hoffman, W. Lund, A. C. Monahan,
E. M. Rapp, J. E. Warren, and J. D. Wolcott

This is the third yearbook of the National Society to deal with an important phase of the administration of rural schools. The several authors

give accounts of what was actually being achieved in typical situations in various parts of the United States at the time the yearbook appeared.

VOLUME FOUR

THE THIRTEENTH YEARBOOK, PART I (1914)

SOME ASPECTS OF HIGH-SCHOOL INSTRUCTION AND ADMINISTRATION

E. R. Breslich, L. D. Coffman, W. A. Jessup, and H. C. Morrison

The three sections of this yearbook are devoted to a discussion of re-constructed mathematics, supervised study, and North Central High Schools, respectively. The first discusses very concretely needed re-adjustments in the subject of mathematics. The second presents the fundamental principles at the basis of the movement for supervised study, together with a review of the experiments that had been tried in various parts of the country. The last paper shows that a clear understanding of existing conditions with respect to the quality of the teaching staff is one of the most important steps in the direction of reconstruction of the subjects of the curriculum.

THE THIRTEENTH YEARBOOK, PART II (1914)

PLANS FOR ORGANIZING SCHOOL SURVEYS, WITH A SUMMARY OF TYPICAL SCHOOL SURVEYS

Charles H. Judd and Henry L. Smith

The first paper in this volume treats the problem of school surveys from three angles: the conditions necessitating careful study of local school situations; the forces that can most safely and profitably be intrusted with making local surveys; and a possible method of approach to the problem in cities of from five to fifty thousand inhabitants. The second paper, by Professor Judd, includes accounts of all major surveys up to 1914, and gives a view of the different types of such inquiries.

THE FOURTEENTH YEARBOOK, PART I (1915)

MINIMUM ESSENTIALS IN ELEMENTARY-SCHOOL SUBJECTS—STANDARDS AND CURRENT PRACTICES

W. C. Bagley, S. A. Courtis, F. N. Freeman, W. S. Gray, H. W. Holmes,
J. F. Hosc, W. A. Jessup, R. G. Jones, H. C. Pryor,
F. E. Thompson, and H. B. Wilson

This yearbook is the 1915 report of investigators coöperating with the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education, H. B. Wilson, chairman. Three other important yearbooks of the Society (XVI, Part I; XVII, Part I; and XVIII, Part II) are devoted to the subsequent reports of this important committee. This report has to do with means of developing a program for economizing time in the elementary school. A general survey is presented, showing how time is at present distributed in representative cities and describing typical experiments for gaining economy. The bulk of the report

deals with minimal standards in reading, handwriting, spelling, composition, grammar, arithmetic, geography, history, and literature, and represents a series of efforts by different contributors to determine for these subjects just what topics or aspects are truly essential.

THE FOURTEENTH YEARBOOK, PART II (1915)

METHODS FOR MEASURING TEACHERS' EFFICIENCY

Arthur C. Boyce

The author of this monograph calls attention first to the need for rating teachers and to the many inadequacies of the schemes for rating that are in common use. To meet this need and overcome these weaknesses, he proposes a method for rating which features a selected list of traits, a careful definition of these traits, and a graphic method for doing the rating. He also sets forth the results obtained by his method and discusses the relative importance of the several qualities of merit in teachers. Mr. Boyce's rating scale has attracted much attention and, in its original form or with variations, has been employed in the rating of large numbers of teachers.

THE FIFTEENTH YEARBOOK, PART I (1916)

STANDARDS AND TESTS FOR THE MEASUREMENT OF THE EFFICIENCY OF SCHOOLS AND SCHOOL SYSTEMS

B. T. Baldwin, F. W. Ballou, D. C. Bliss, B. R. Buckingham, H. G. Childs, S. A. Curtis, E. P. Cubberley, C. H. Judd, George Melcher, E. E. Oberholtzer, J. B. Sears, Daniel Starch, G. D. Strayer, M. R. Trabue, and G. M. Whipple

This volume is the report of the Committee of the National Council of Education of the National Education Association, under the chairmanship of G. D. Strayer, assisted by several invited collaborators. The fifteen chapters are grouped into two sections. Section I deals with the derivation of scales and units of measurement, including scales for physical growth and for arithmetic, score cards for city school buildings, and completion tests for school use. Section II deals with the application of scales and units of measurement in the work of educational supervision and administration. Among the systems from which accounts of the use of measuring scales are reported are Boston; Montclair; Bloomington, Indiana; Detroit; Salt Lake City; Kansas City, Missouri; Tulsa, Oklahoma; Oakland, California; Cleveland, Ohio; and Madison, Wisconsin.

VOLUME FIVE

THE FIFTEENTH YEARBOOK, PART II (1916)

THE RELATIONSHIP BETWEEN PERSISTENCE IN SCHOOL AND HOME CONDITIONS
Charles E. Holley

The author of this monograph investigated on a fairly comprehensive scale the question: What factors determine the number of years of schooling

received by pupils in the public schools? Among the conclusions reached are these: (1) There is a high correlation between the general cultural advantages of a home and the schooling the children will receive. (2) Environmental influences more often cause a child to stop attending school than lack of ability. (3) Early elimination from school is largely due to factors over which the school has little or no control. (4) High schools are largely attended by the children of the "better class." (5) Marriages are distinctly affected by "educational selection." (6) A family tradition of schooling is effective in inducing unusual persistence in school in some cases.

THE FIFTEENTH YEARBOOK, PART III (1916)

THE JUNIOR HIGH SCHOOL Aubrey A. Douglass

This monograph, which is accompanied by a bibliography of 173 titles, presents an excellent account of the junior high school as it existed in 1916. In the Appendix, particularly, will be found a general summary of the situation based on information from 100 American cities. The body of the volume discusses the general problems involved, the arguments for and against this type of school, its curriculum, its housing, and the characteristics of adolescence that it attempts to meet and utilize.

THE SIXTEENTH YEARBOOK, PART I (1917)

SECOND REPORT OF THE COMMITTEE ON MINIMAL ESSENTIALS IN ELEMENTARY-SCHOOL SUBJECTS

W. C. Bagley, W. W. Charters, F. N. Freeman, W. S. Gray, Ernest Horn,
J. H. Hoskinson, W. S. Monroe, C. F. Munson, H. C. Pryor,
L. W. Rapeer, G. M. Wilson, and H. B. Wilson

This yearbook is the 1917 report of investigators cooperating with the Committee on Economy of Time of the Department of Superintendence of the National Education Association, H. B. Wilson, chairman, and is the second printed report of that committee. It contains a further report on every subject discussed in the first report (Fourteenth Yearbook, Part I) and also a preliminary report on physical education. In this report the emphasis is upon the social value of the content of the several school subjects as a basis for the instruction given in them.

THE SIXTEENTH YEARBOOK, PART II (1917)

THE EFFICIENCY OF COLLEGE STUDENTS AS CONDITIONED BY AGE AT ENTRANCE AND SIZE OF HIGH SCHOOL

B. F. Pittenger

The author of this monograph sought by statistical methods to answer two questions: Is the quality of work done by college students affected by the age at which they enter or by the size of the high school from which they come? His results, based on a study of 828 students at the University of Minnesota, show, among other things, (1) that those entering before 18 years

of age did better work than those who entered at 18 or later, (2) that graduates of public schools did better work than graduates of military, private, or church schools, (3) that graduates of large schools did better work than graduates of small schools, (4) that the women did better work than the men, and (5) that elimination from the college, especially in the freshman year, is highly qualitative, in that the good students tend to remain and the poor ones to leave.

THE SEVENTEENTH YEARBOOK, PART I (1918)

THIRD REPORT OF THE COMMITTEE ON ECONOMY OF TIME IN EDUCATION

W. C. Bagley, B. B. Bassett, M. E. Branom, Alice Camerer, J. E. Dealey,
C. A. Ellwood, E. B. Greene, A. B. Hart, J. F. Hosie, E. T. Housh,
W. H. Mace, L. R. Marston, H. C. McKown, A. E. Mitchell,
W. C. Reavis, D. Snedden, and H. B. Wilson

This is the 1918, or third (printed) report of the Committee of the Department of Superintendence of the National Education Association on Economy of Time in Education, and is prepared by various coöperating investigators. Like the first and second reports, printed as yearbooks of this Society, it deals primarily with studies concerning the minimal essentials of various elementary-school subjects, including arithmetic, geography, reading, composition, civics, and history. A special feature of this report is a symposium on the purposes of historical instruction in the seventh and eighth grades, arranged by W. C. Bagley, and contributed to by Professors Dealey, Ellwood, Greene, Hart, Mace, and Snedden. With the exception of this symposium, the various articles in this yearbook deal with actual investigations of the content of the curriculum, especially in its relation to the needs of daily life.

VOLUME SIX

THE SEVENTEENTH YEARBOOK, PART II (1918)

THE MEASUREMENT OF EDUCATIONAL PRODUCTS

E. J. Ashbaugh, W. A. Averill, L. P. Ayres, F. W. Ballou, Edna Bryner,
B. R. Buckingham, S. A. Courtis, M. E. Haggerty, C. H. Judd,
George Melcher, W. S. Monroe, E. A. Nifenecker,
and E. L. Thorndike

The writers of this yearbook prepared it as representatives of the National Association of Directors of Educational Research (now the Educational Research Association) with the intent "to gather into one handy volume a rather complete statement of the various aspects of a new movement which seems destined to have a profound and permanent influence upon American Education." From the ready reception accorded the yearbook, it is not too much to say that this "rather complete statement" had, itself, a quite considerable influence in furthering the movement for educational measurement. Among the topics considered were: the history of educational measurement, the nature and purposes of such measurement, the organization of bureaus of research, a list of existing tests and scales, an exposition of statistical terms and methods, and suggestions for future development.

THE EIGHTEENTH YEARBOOK, PART I (1919)

THE PROFESSIONAL PREPARATION OF HIGH-SCHOOL TEACHERS

G. N. Cade, S. S. Colvin, Charles Fordyce, H. H. Foster, T. W. Gosling, W. S. Gray, L. V. Koos, A. R. Mead, H. L. Miller, F. C. Whitecomb, and Clifford Woody

The first 160 pages of this "double number" are devoted to a description by H. L. Miller of the University of Wisconsin plan for the preparation of high-school teachers. Section II contains three chapters by Gosling, Colvin, Koos, and Woody on miscellaneous aspects of the problem of teacher-training. Section III, which the remaining contributors prepared, is a report of the Committee of the Society of College Teachers of Education on Practice Teaching for Secondary Teachers. The volume as a whole thus contains not only important analyses of prevailing conditions in the training of high-school teachers, but also suggestive accounts of several novel experiments looking toward the bettering of the deficiencies found to exist in the preparation of such teachers.

THE EIGHTEENTH YEARBOOK, PART II (1919)

REPORT ON ECONOMY OF TIME IN LEARNING: FOURTH REPORT OF COMMITTEE ON ECONOMY OF TIME IN EDUCATION

F. C. Ayer, F. N. Freeman, W. S. Gray, Ernest Horn, W. S. Monroe, C. E. Seashore, and H. B. Wilson

This group of investigators operated as a sub-committee of the committee that was responsible for three preceding yearbooks bearing similar titles. The group took as its task the formulation of rules, or recipes, by which economy could be secured in education, not by better selection of topics for instruction (stressed in the preceding reports), but by improved methods of teaching which had been selected. The yearbook, accordingly, takes the form of a series of statements of fundamental principles which investigation, or the best expert opinion, has shown should be followed in teaching writing, reading, spelling, arithmetic, drawing, and music. This 'meaty' report has been much quoted and decidedly influential.

VOLUME SEVEN

NINETEENTH YEARBOOK, PART I (1920)

NEW MATERIALS OF INSTRUCTION

A Committee of the Society was created in 1918 under the title "Committee on Materials of Education," which had for its members Messrs. W. C. Bagley, J. C. Brown, C. E. Chadsey, L. D. Coffman, E. P. Cubberley, E. C. Elliott, H. C. Morrison, G. D. Strayer, G. M. Whipple, and C. H. Judd, chairman. With the coöperation of numerous persons this Committee assembled as their first report detailed examples of new materials of instruction, particularly in the fields of reading, geography, history, nature study, mathematics, and community life. The Committee stressed the importance of inducing school boards to set aside each year a certain amount of instructional energy for the purpose

of making similar new materials of instruction. (For further discussion of this topic, see the Twentieth Yearbook, Part I.)

NINETEENTH YEARBOOK, PART II (1920)

CLASSROOM PROBLEMS IN THE EDUCATION OF GIFTED CHILDREN

Theodore S. Henry

Dr. Henry summarized various types of flexible promotion schemes, described typical special rooms for gifted pupils, and then recounted at length the methods and results of an experimental room for gifted pupils organized at Urbana, Illinois. The closing chapters, in addition to a six-page bibliography, discuss the problem of adapting classroom methods to the training of gifted children, and present a series of eighteen specific recommendations for carrying on this type of educational endeavor. (For further discussion of this topic, see the Twenty-Third Yearbook, Part I.)

THE TWENTIETH YEARBOOK, PART I (1921)

SECOND REPORT OF THE SOCIETY'S COMMITTEE ON NEW MATERIALS OF INSTRUCTION

Frances Berry, Edna Keith, F. J. Kelly, W. N. Kerr, H. G. Lull, Nellie R. Olson, Nina Vandewalker, F. L. Whitney, and Numerous Collaborators

The Society's Committee (the same as that for the Nineteenth Yearbook, Part I), under the chairmanship of F. J. Kelly, appointed as sub-committee chairmen the persons listed above, who gathered and organized 295 detailed examples of new materials of instruction, and classified them for use in the kindergarten, the various elementary grades, the junior and the senior high school, and in special classes for the subnormal. These exercises, or 'projects,' all possess a degree of novelty and by the strong appeal they make to children are decidedly suggestive to teachers who are searching for material outside that of the regular textbooks or ordinary supplementary reading. This yearbook, like its predecessor on the same topic, may be regarded as a portion of the contribution made by this Society toward the reorganization of the curriculum.

THE TWENTIETH YEARBOOK, PART II (1921)

REPORT OF THE SOCIETY'S COMMITTEE ON SILENT READING

May A. Burgess, S. A. Courtis, C. E. Germane, W. S. Gray, H. A. Greene, Regina R. Heller, J. H. Hoover, James A. O'Brien, J. L. Packer, Daniel Starch, W. W. Theisen, G. A. Yoakum, and Representatives of the School Systems of Cedar Rapids, Denver, Iowa City, and Racine

The Executive Committee of the Society appointed a Committee on Silent Reading, under the chairmanship of Earnest Horn, which gathered the material in this volume as its report. Section I comprises ten chapters concerned with investigations of various aspects of the problem of reading, as for instance, the difficulties encountered in teaching silent reading, the measurement of speed and comprehension of silent reading, the vocabularies and contents of readers, and the development of reading speed., Section II contains examples

of concrete exercises which have actually been tried in the classroom for teaching silent reading. This yearbook may be regarded as intermediate in scope and purpose between the several treatments of reading in the earlier yearbooks on minimal essentials and the economy of time and the elaborate treatment of reading in the Twenty-Fourth Yearbook, Part I.

VOLUME EIGHT

TWENTY-FIRST YEARBOOK, PARTS I AND II (1922)

INTELLIGENCE TESTS AND THEIR USE

S. S. Colvin, Helen Davis, Bessie L. Gambrill, Henry W. Holmes, W. K. Layton, W. S. Miller, Rudolph Pintner, Agnes L. Rogers, H. O. Rugg, M. R. Trabue, E. L. Thorndike, and G. M. Whipple

Under the chairmanship of the late S. S. Colvin, this Committee of the Society produced this yearbook of 270 pages in the attempt to explain "in a clear and accurate manner the theory, nature, and practical use of intelligence tests." Its two parts are bound in one cover. Part I treats of 'general intelligence,' its nature, how it may be measured, how mental tests have developed, and their essential characteristics. Part II treats in considerable detail "the administrative uses of intelligence tests in various grades, beginning with the primary grade and ending with the college and university." In addition to a wide circulation among schoolmen, this yearbook has been extensively used for purposes of instruction in normal schools and colleges.

TWENTY-SECOND YEARBOOK, PART I (1923)

ENGLISH COMPOSITION: ITS AIMS, METHODS, AND MEASUREMENT Earl Hudelson

By means of questionnaires the author sought to discover from teachers of English what their actual aims and methods were with respect to composition. He next considered the means employed for determining the extent to which these aims were being attained and was led to devise and to standardize two scales for the measurement of English composition. His principal contention is that most composition scales test only how well the pupil can write upon that particular topic, not how well he can possibly write. For the latter purpose he proposes his Maximal Composition Ability Scale. To determine accurately from time to time the extent to which the pupils are exercising their real ability, he proposes another device known as the Typical Composition Ability Scale. Detailed instructions are given for the use of these two scales.

TWENTY-SECOND YEARBOOK, PART II (1923)

THE SOCIAL STUDIES IN THE ELEMENTARY AND SECONDARY SCHOOL

A. S. Barr, J. J. Coss, Henry Harap, R. W. Hatch, H. C. Hill, Ernest Horn, C. H. Judd, L. C. Marshall, F. M. McMurry, Earle Rugg, H. O. Rugg, Emma Scheweppe, Mabel Snedaker, and C. W. Washburne

This group of writers, under the direction of H. O. Rugg, has presented in this 324-page yearbook important and somewhat radical proposals concerning

the portion of the curriculum devoted to the social studies. Section I analyzes current practices, shows how social science curricula came to be what they are, and points out needed changes. Section II presents samples of reorganized courses in this field in several schools. Section III discusses the method by which such reorganizations of the curriculum should be carried on. Section IV is a critical appraisal of F. M. McMurry of the proposed reorganizations. This volume may be regarded as one of several fore-runners of the proposed year-books on the Technique of Curriculum-Making. It applies, obviously, primarily to the geographical and historical portions of the curriculum.

VOLUME NINE

TWENTY-THIRD YEARBOOK, PART I (1924)

THE EDUCATION OF GIFTED CHILDREN

B. T. Baldwin, Helen Davis, Lillie R. Ernst, F. N. Freeman, T. S. Henry, Ernest Horn, H. O. Rugg, L. O. Smith, L. M. Terman, C. W. Waddle, and G. M. Whipple, chairman (the Society's Committee)

assisted by

J. R. Benson, E. R. Breslich, Arthur Brogue, Margaret V. Cobb, R. R. Cook, J. C. DeVoss, Anna M. Engel, E. M. Haney, H. C. Hill, K. J. Hoke, Leta A. Hollingworth, A. J. Martin, E. L. Moyer, Mary L. Patrick, W. C. Reavis, Grace A. Taylor, H. G. Townsend, C. W. Washburne, and W. L. Uhl

This extensive yearbook (443 pages of text) may be regarded as an attempt to gain further light and a more varied and comprehensive survey of the problem discussed in the Nineteenth Yearbook, Part II. Section I contains various reports and summaries of the more general aspects of the problem—the history of the movement for special training of the gifted, methods of locating such children, problems of organization and administration, the adaptation of the curriculum, non-intellectual traits of gifted children, etc. Section II presents numerous special studies of such children, with respect to their physical and mental traits, their educational achievements, their subsequent careers in the high school and university, and the outcomes of various school experiments in providing special training for them. Section III is a valuable annotated bibliography of 453 titles.

TWENTY-THIRD YEARBOOK, PART II (1924)

VOCATIONAL GUIDANCE AND VOCATIONAL EDUCATION FOR THE INDUSTRIES

A. H. Edgerton and Fifty Collaborators

This yearbook is one of the largest ever undertaken by the Society. The material for it was gathered and organized by Professor Edgerton from many sources and with the aid of half a hundred contributors. It affords, therefore, a comprehensive exposition of the present status of the branch of educational endeavor to which it is devoted. Section I, which deals with vocational guid-

ance, gives detailed accounts of what is already being done in various city schools systems, both large and small, and in colleges and universities, also accounts of methods of training vocational counselors. Section II deals with vocational education for the industries. It shows what is being done in typical part-time, or continuation, schools and in typical day and evening industrial courses in smaller cities. Further, there is discussion of the training of workers in industry, the training of foremen, and the training of teachers for vocational industrial schools. Both sections are supplied with bibliographies.

VOLUME TEN

TWENTY-FOURTH YEARBOOK, PART I (1925)

REPORT OF THE NATIONAL COMMITTEE ON READING

F. W. Ballou, W. S. Gray, Rose L. Hardy, Ernest Horn, Frances Jenkins,
S. A. Leonard, Estaline Wilson, and Laura Zirbes

Under the chairmanship of W. S. Gray, this Committee, appointed by Commissioner Tigert in January, 1923, subsidized by the Commonwealth Fund, and assisted by numerous school and university specialists, has used the avenue of publication afforded by this Society to present what is one of the most authoritative and most useful general discussions of the problem of reading that has been made available. Among the topics considered are: the aims of instruction in reading, a modern program of reading instruction for the elementary grades and the high school, methods of developing a meaningful vocabulary, the relation of reading to literature and the other content subjects, materials for instruction, standardized and informal reading tests, recognition of individual differences by diagnosis and remedial work. A feature of the book is the series of specific recommendations in which the members of the Committee, by discussion and experiment, have been able to concur.

TWENTY-FOURTH YEARBOOK, PART II (1925)

ADAPTING THE SCHOOLS TO INDIVIDUAL DIFFERENCES

Franklin Bobbitt, B. R. Buckingham, S. A. Courtis, W. S. Gray, Ernest Horn,
Jessie Mackinder, Helen Parkhurst, A. H. Sutherland, Mary A. Ward,
C. W. Washburne, chairman (the Society's Committee)

assisted by

Cecilia Anderson, R. N. Brown, Grace E. Carter, F. E. Clerk, Mary H. Comings,
U. J. Hoffman, Hilda M. Holmes, W. H. Holmes, W. H. Kilpatrick,
S. A. Leonard, J. L. McCrory, H. L. Miller, W. C. Reavis,
Margaret Smith, A. J. Stoddard, Elizabeth T. Sullivan,
L. Belle Voegelein, and W. A. Wirt

Section I of this important yearbook describes the factors which under ordinary school conditions tend to produce maladjustments of pupils with respect to grading and rate of progress. Section II follows with a description of typical attempts to meet these difficulties by adjusting the school's organiza-

tion and methods of instruction. Section III details statistical results of experiments in the individualization of instruction, with special reference to the work at Winnetka. Section IV discusses the various problems which are encountered in thus adapting schools, and Section V outlines the steps involved in launching a program of this sort. Section VI is a critique of these proposals, while Section VII comprises an annotated bibliography of 76 pages.

VOLUME ELEVEN

TWENTY-FIFTH YEARBOOK, PART I (1926)

THE PRESENT STATUS OF SAFETY EDUCATION

M. B. Hillegas, A. B. Meredith, Z. E. Scott, A. W. Whitney, S. J. Williams,
and G. M. Whipple, chairman (of the Society's Committee)

assisted by

Rena Allen, Mary N. Arrowsmith, Harriet E. Beard, Mary B. Day, Ruth C. Earle, H. S. Gruver, J. H. Harvey, Max Henig, Evelyn T. Holston, W. D. Keefer, Frances H. Miner, E. G. Payne, M. S. Pittman, Mary O. Pottenger, Idabelle Stevenson, and Ruth Streit

This yearbook represents the product of coöperation between this Society and the Education Division of the National Safety Council. It traces the development of the safety movement in industry, in the schools, and in civic administration, shows how safety education has been introduced into various school systems, presents at great length and in full detail the materials and methods of a program of safety education for the elementary schools, with additional suggestions for the adaptation and extension of this program for use in high schools, and in rural and vocational schools. The volume concludes with a general discussion of the significance of safety education and the outlook for its future development.

TWENTY-FIFTH YEARBOOK, PART II (1926)

EXTRA-CURRICULAR ACTIVITIES

F. C. Ayer, C. R. Foster, E. K. Fretwell, L. V. Koos, J. G. Masters,
M. C. Prunty, W. C. Reavis, Earle Rugg, and P. W.
Terry (the Society's Committee)

assisted by

E. H. Chappelle, F. Fickinger, C. E. Hagie, M. B. Hörner, H. C. McKown,
C. J. Pieper, E. S. Simmonds, and Clifford Woody

Under the chairmanship of L. V. Koos, this Committee and its associates, by extensive canvassing of the country, has brought together a comprehensive statement of the present status of extra-curricular activities in the public schools of the United States. The Committee has not sought primarily to evaluate these varied activities or to prescribe rules for their inauguration or

control, but rather to state current practices with respect to such matters as honor societies, publications, student government organizations, debating, music, athletics, assemblies, and clubs of all kinds. These are discussed for elementary, for junior-high, and for senior-high schools. Special attention is paid to the relation of the teacher to these various enterprises.

VOLUME TWELVE

TWENTY-SIXTH YEARBOOK, PARTS I AND II (1927)

THE FOUNDATIONS AND TECHNIQUE OF CURRICULUM CONSTRUCTION

William C. Bagley, Franklin Bobbitt, Frederick G. Bonser, Werrett W. Charters,
George S. Counts, Stuart A. Curtis, Ernest Horn, Charles H. Judd,
Frederick J. Kelly, William H. Kilpatrick, Harold Rugg (Chairman),
George A. Works (Members of the Society's Committee)

Associated Contributors

Otis W. Caldwell, Walter D. Cocking, Ellsworth Collings, Flora J. Cooke, J. L.
Flanders, Harry O. Gillet, John A. Hockett, Marietta Johnson, Margaret
Naumburg, Jesse H. Newlon, Raymond W. Osborne, Henry Carr
Pearson, C. A. Phillips, Caroline Pratt, William C. Reavis, Ethel I.
Salisbury, E. M. Sipple, Eugene R. Smith, A. L. Threlkeld,
Carleton Washburne

From time to time, in a dynamic society it is imperative that we stand aside from the movement of affairs to review trends, to assay products, to map out new paths. The chief purpose of this Yearbook is a study and appraisal so far as agreement is possible of curriculum making in American schools—past and present.

For two years the Society's Committee was engaged in the development of one phase or another of the work, either in collecting and appraising the contemporary situation, in studying the chief trends of development in the past century or in prolonged round table conferences over similarities and divergences in educational theory.

This Yearbook presents three results of their efforts: a historical review, a description and evaluation of contemporary practices, and a statement of foundational principles for curriculum reconstruction.

Part I of this Yearbook attempts a description and critical synthesis of curriculum-making, past and present. Part II presents the committee's joint platform for curriculum-construction—a general statement of the foundational principles upon which the committee desires to see the next steps taken in the reconstruction of the school curriculum. Also the frank and interesting individual statements of the views of the several members of the committee.

VOLUME THIRTEEN

TWENTY-SEVENTH YEARBOOK, PART I (1928)

NATURE AND NURTURE: THEIR INFLUENCE UPON INTELLIGENCE

Lewis M. Terman, Barbara S. Burks, Truman L. Kelley, E. L. Thorndike,
Raymond R. Willoughby, Harold E. Jones, Helen L. Koch, Gladys G.
Tallman, Mildred Burlingame, Calvin P. Stone, Frank N. Freeman,
K. J. Holzinger, Blythe C. Mitchell, Agnes L. Rogers, Dorothy
Durling, Katharine McBride, Joseph Peterson, Katherine
Murdoch, Doris Maddow, Nettie L. Berg, Gertrude
Hildreth, Florence L. Goodenough, Carolyn Hoefler,
Mattie C. Hardy, Lois Doe-Kulmann, Arnold
Gesell, Janet A. Matthew, Bertha M. Luckey,
Katharine B. Greene, Mary L. Casey,
Helen P. Davidson, Doris I. Harter,
and Arthur I. Gates

Part I contains a very useful and important chapter furnished by Mrs. Herman Ramsperger of Stanford University on difficulties met in the statistical handling of the material of nature-nurture studies. Her section on the discovery and expression of degrees of causation among groups of dependent factors is particularly important, including as it does discussion of path coefficients and coefficients of determination. Other chapters contain a study of the intelligence of siblings by E. L. Thorndike of Teachers College, Columbia University, a comparison of white and negro children in rational learning by Joseph Peterson of George Peabody College for Teachers, a study of the effect of the nursery school upon intelligence by Florence L. Goodenough of the University of Minnesota, and a checking of the effects of training by A. I. Gates of Teachers College, Columbia University. These are grouped under seven heads: (1) Family resemblance; (2) intelligence and social environment; (3) race differences; (4) intelligence and schooling; (5) relation to health or physique; (6) constancy of the IQ; and (7) effects of coaching or special training.

TWENTY-SEVENTH YEARBOOK, PART II (1928)

NATURE AND NURTURE: THEIR INFLUENCE UPON ACHIEVEMENT

Lewis M. Terman, Leta S. Hollingworth, Margaret V. Cobb, J. D. Heilman,
Katherine M. Denworth, F. P. Obrien, Howard Taylor, M. J. Van
Wagenen, William A. McCall, T. C. Holy, Lonzo Jones, G. M.
Ruch, L. Dewey Anderson, June E. Downey, Mark A. May,
Hugh Hartshorne, Guy M. Whipple, Joseph Peterson,
M. C. Barlow, P. R. Farnsworth, and Barbara S. Burks

The investigations of Part II of the Yearbook are grouped under five heads: (1) Achievement and intelligence; (2) achievement and school attendance; (3) achievement and teaching ability or school methods; (4) achievement and school expenditures; and (5) achievement and effort.

The basic question asked in Part II is as to whether (1) native ability or (2) public school experience determines levels of pupil achievement in school tasks. The most careful answer is offered in Chapter II, where J. D. Heilman of Colorado State Teachers College reports the use among a group of 828 ten-year old public school children in Denver of expressions of amount for (1) mental age, (2) school attitude, and (3) home status to determine school achievement in terms of educational age. He uses Sewell Wright's path coefficient method and finds that at least "50 percent of the variation in educational age" is due to heredity as measured in the study. School attendance alone accounts for but about 5 percent of the differences in school achievement found in his group of ten-year old pupils, and if the influence of school attendance in combination with mentality be added, not over 13 percent to 19 percent of educational age can be attributed to educational exposure. The implications of these findings for probable necessary length of elementary education are very apparent. The chairman of the Yearbook Committee, L. M. Terman, says, "Results such as those of Heilman open the question as to whether eight years of school attendance is really necessary to bring pupils up to the standard usually achieved by the eighth grade. One wonders whether in the four or five years between ten and fourteen they might not learn to read, write, and spell as well, and master as much arithmetic, history, and geography as they would be likely to in eight years."

VOLUME FOURTEEN

TWENTY-EIGHTH YEARBOOK, PARTS I AND II

PRESCHOOL AND PARENTAL EDUCATION

Prepared by the Society's Committee

B. T. Baldwin (deceased), Arnold Gesell, Patty S. Hill, Douglas Thom, Edna White, Helen T. Woolley, and Lois H. Meek (Chairman)

Assisted by

W. E. Blatz, Agnes Burke, Grace Caldwell, Lelah M. Crabbs, Bess V. Cunningham, Mary D. Davis, Charlotte G. Garrison, Ernest Groves, Sidonie M. Gruenberg, Ruth Haefner, Francis A. Hungerford, Harriet Johnson, H. E. Jones, Grace Langdon, Elizabeth Lord, Lawson Lowrey, Elizabeth Moore, Mary Murphy, Winifred Rand, Mae Raymond, Mandel Sherman, G. S. Stevenson, Mary Sweeny, Nell B. Taylor, Flora Thurston, Leona Vincent, Beth Wellman, C. A. Wilson, and Elizabeth Woods

The Twenty-Eighth Yearbook is the most significant contribution that has been made to the literature of preschool and parental education. A request for a yearbook in this field was made to the National Society for the Study of Education in February, 1925, and the committee was formally organized in October, 1925. Dr. Lois Hayden Meek, Educational Secretary for the American Association of University Women, was appointed chairman and the other members of the committee were chosen to represent various aspects of preschool and parental education; Dr. Bird T. Baldwin and Dr. Arnold Gesell,

research in child development; Professor Patty Smith Hill, education of young children; Miss Edna N. White, home economics aspect of preschool and parental education; Dr. Helen T. Woolley, psychological aspects of personality problems of childhood; Dr. Douglas Thom, the psychiatric aspect of child problems. A generous grant from the Laura Spelman Rockefeller Memorial, supplementing the appropriation of the National Society for the Study of Education, made possible the work of the Committee.

The seven members of the Committee and the twenty-nine contributors associated with them, have assembled and presented in the Yearbook a most comprehensive survey of the present status of preschool and parental education. In setting forth the Committee's purpose for the Yearbook, Dr. Meek says in the introduction: "The Committee hopes that the present yearbook will help to show the trends of the movement, to point out the need for carefully trained personnel, to emphasize the varied influences of home, school and community life, and to focus attention on the total aspect of child development—physical, emotional and social, as well as intellectual." She further states that the Committee worked and thought together on practically every part of the book in an effort to unify the contributions of the many who supplied the wealth of data, and to present the material concerning the education of children and parents from a point of view which would integrate a movement participated in by many groups with varying objectives and backgrounds.

Throughout the book the term preschool refers "to the whole period of infancy and early childhood, from birth up to elementary school entrance at the age of six or seven." The term parental education is used "in its broadest sense to include all methods and devices of adult education intended to assist parents in the understanding and care of their children."

The book is divided into two parts—Part I on organization and development of preschool and parental education, and Part II on research and method in this field. In Part I, the history of the movement is given, including a brief discussion of the beginnings of the kindergarten, the Montessori school, the nursery school, child health centers, play schools and child study groups. The following general considerations underlying preschool and parental education are stressed: the importance of the preschool years from the standpoint of growth and development, the influence of home and parents, the need of supplementary educational agencies and fundamentally of educating parents themselves. The present organization of education for preschool children is given in considerable detail covering the family as an agency, day nurseries, maternity and infant welfare centers, the clinics, nursery schools and kindergartens. Part II also includes a survey of current programs in parental education and experiments in preparental training, and indicates what is being done in professional training for research and instruction in preschool education, in the professional training of nursery school teachers, and in the training of leaders in parental education.

Part II, on research and method, opens with research activities in the field of child development, indicating the present status of research in child development and citing the outstanding studies of motor, language, intellectual, emotional and social development and of physical growth. A section follows on educating preschool children, with a thorough discussion of child activities,

including those leading to the establishment of routine habits, play, art experiences, language and literature and social development. Provision for individual differences and the records of young children are also introduced. A concluding section deals with methods and materials for the education of parents and of practical ways of educating parents and teachers to the value of mental hygiene.

The Twenty-Eighth Yearbook is a very valuable source book in the field of preschool and parental education—a book which administrators, supervisors, teachers and parents interested in general or specialized education for the preschool child or the parent will find an indispensable addition to their libraries.

VOLUME FIFTEEN

TWENTY-NINTH YEARBOOK, PARTS I AND II (1930)

REPORT OF THE SOCIETY'S COMMITTEE ON ARITHMETIC

W. A. Brownell, B. R. Buckingham, G. T. Buswell, C. E. Greene, R. L. West,
F. B. Knight, (Chairman)

Assisted by

E. A. Beito, J. C. Brown, L. J. Brueckner, J. R. Clark, W. F. Dearborn,
Arthur Edwards, H. L. Harap, Ernest Horn, C. H. Judd, Fred Kelly,
L. A. King, R. H. Lane, Josephine MacLatchy, C. R. Mead, R. L.
Morton, Elma A. Neal, G. M. Norem, W. J. Osburn, J. R.
Overman, Isidoro Panlasigui, Harriet E. Peet, F. G.
Pickell, A. C. Repp, G. M. Ruch, C. W. Stone,
Florence Stratemeyer, and C. W. Washburne

The Twenty-Ninth Yearbook of the National Society for the Study of Education was prepared by the Society's committee on arithmetic, of which F. B. Knight is chairman, and the membership includes W. A. Brownell, B. R. Buckingham, G. T. Buswell, C. E. Greene, and R. L. West. Thirty other active members of the Society assisted the committee in the preparation of this 700 page report, or acted as a special reviewing committee, whose critique of the work as a whole appears at the end of the Yearbook.

The Twenty-Ninth Yearbook is divided into two parts. Part I, *Some Aspects of Modern Thought on Arithmetic*, contains an article on "The Social Value of Arithmetic," by B. R. Buckingham; one on "The Arithmetic Curriculum," by West, Greene, and Brownell; on "Some Considerations of Method," by F. B. Knight; on "Testing and Diagnosis," by Greene and Buswell; and on "The Training of Teachers," by B. R. Buckingham.

Part II, *Research in Arithmetic*, contains a study of techniques by W. A. Brownell, a critical survey of previous research in arithmetic, by G. T. Buswell, and reports of eleven hitherto unpublished studies on various pertinent topics. The Appendix contains a *Critique of the Yearbook* by the reviewing committee, Leo J. Brueckner, chairman.

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